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October 2014

OS X YOSEMITE

— SAY HELLO TO YOUR MAC'S NEXT OS —

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October 2014

38

ON THE COVER:
PHOTOGRAPHY BY PETER BELANGER

October 2014

74

Multimedia at Macworld.com

Video: Master OS X Windows

Moom and Zooom make managing your OS X windows much easier (go.macworld.com/moomzooom).
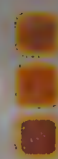
We also recommend:

Video: Blur moving objects with Motion 5 (go.macworld.com/motion).

Video: How to rip a Blu-ray disc (go.macworld.com/blurayrip).

Podcast: Hot tech issues (go. macworld.com/techissues).

Introducing Blackmagic URSA, the world's first user upgradeable 4K digital film camera!

Blackmagic URSA is the world's first high end digital film camera designed to revolutionize workflow on set. Built to handle the ergonomics of large film crews as well as single person use, URSA has everything built in, including a massive 10 inch fold out on set monitor, large user upgradeable Super 35 global shutter 4K image sensor, 12G-SDI and internal dual RAW and ProRes recorders.
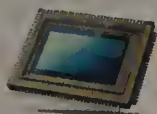
Super 35 Size Sensor

URSA is a true professional digital film camera with a 4K sensor, global shutter and an incredible 12 stops of dynamic range. The wide dynamic range blows away regular video cameras or even high end broadcast cameras, so you get dramatically better images that look like true digital film. The extra large Super 35 size allows for creative shallow depth of field shooting plus RAW and ProRes means you get incredible quality!
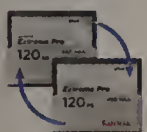
Dual Recorders

Blackmagic URSA features dual recorders so you never need to stop recording to change media. That's critical if you are shooting an historical event, important interview or where you just cannot stop shooting! Simply load an empty CFast card into the second recorder and when the current card is full, the recording will continue onto the second card, allowing you to change out the full card and keep shooting!

User Upgradeable Sensor

Blackmagic URSA features a modular camera turret that can be removed by unscrewing 4 simple bolts! The camera turret includes the sensor, lens mount and lens control connections and can be upgraded in the future when new types of sensors are developed. This means your next camera will be a fraction of the cost of buying a whole new camera! Choose professional PL mount, popular EF mount and more!

Built in On Set Monitoring!

Say goodbye to bulky on set monitors because you get a massive fold out 10 inch screen built into Blackmagic URSA, making it the world's biggest viewfinder! The screen is super bright and features an ultra wide viewing angle. URSA also includes two extra 5" touch screens on both sides of the camera showing settings such as format, frame rate, shutter angle plus scopes for checking levels, audio and focus!

Blackmagic URSA EF $5,995   **Blackmagic URSA PL** $6,495

www.blackmagicdesign.com
Lenses and accessories shown are not included

Blackmagicdesign

Apple TV: The Home-Automation Hub?

To be truly user friendly, Apple's HomeKit framework will need some hardware.

At this year's Worldwide Developers Conference, Apple announced—among a great many other things—HomeKit, a suite of tools for controlling devices such as thermostats, furnaces and air conditioners, lights, cameras, smart appliances, garage-door openers, and security systems.

You'll be able to control them all from your iOS device. And it sounds great. Imagine your garage door sliding open and your back door unlocking as your car approaches the driveway, or the lights dimming and the fireplace blazing into action as you near the front door with your date.

But imagine this as well: You're halfway across the country on a business trip, and your kids call and ask if you can flip on the lights downstairs because they're afraid of the dark. Or a heat wave hits home while you're away, and you want to turn up the air conditioning to preserve your Old Master hanging over the piano. Or—anticipating that hot date—you'd like to crank up the fridge to chill the champagne a bit more before you get home in an hour. How will you communicate with all those devices from your remote location?

OUT OF CONTROL

If you're familiar with the Nest Learning Thermostat, you know that using it remotely requires setting up a Nest account and downloading its app. Now think about doing a similar thing with a dozen or more smart appliances. It would be a bother to dash from app to app. And do you really want to provide access to your home network and its devices to dozens of companies?

I have to think that Apple has more in mind with regard to remote access via

> **The Apple TV could become the gatekeeper for your home's gear—both appliances and computing devices.**

HomeKit. The process shouldn't get ugly simply because you're not within range of your home's Wi-Fi network or iBeacon signal. You need something that will arbitrate between you at your remote location and the devices in your home.

"My Mac can easily do it!" you shout.

Possibly. But that arrangement shuts out potential HomeKit users who don't have a Mac or who don't relish the idea of leaving their computer running at all hours and consuming energy just for the ability to switch off the lights.

Wouldn't it be better if each home had a small, power-efficient, always-on, platform-agnostic, Wi-Fi–enabled computer that could talk to the other devices remotely and over a local network?

NOT JUST A BOX

Consider the Apple TV. Beneath that little box's rounded-rectangular shell is a computer running a form of iOS. One of the beauties of iOS (as well as OS X) is that it's modular: For it to take on a different kind of chore, it merely requires a new software component.

Current Apple TVs have processors too puny to handle home-automation duties, and their storage is too limited to help work such miracles. Throw an A7 processor and some extra flash storage into a next-generation Apple TV, however, and you have a hefty hunk of hardware—one that could not only manage a home but also accommodate third-party apps for opening up the device to media and games.

The Apple TV could become the gatekeeper for your home's gear—appliances as well as traditional computing devices. Imagine a "Back to My Mac" feature that could control everything on the network (and, unlike "Back to My Mac," would actually work all the time).

It could also provide a layer of security. Rather than allowing each device to send the intimate details of your home to Nest, Honeywell, GE, and—perhaps more significantly—Google and Facebook, how about storing all this information on the Apple TV, where it remains hashed for security? When you need to make adjustments or receive reports, data transmits via the Apple TV. Your assorted smart appliances would remain dumb to any interaction other than that with Apple's home hub. Each device's original manufacturer would be none the wiser to your activities.

I've been wanting a more flexible Apple TV for quite a while. With the introduction of HomeKit, that desire has become a raging passion. ■

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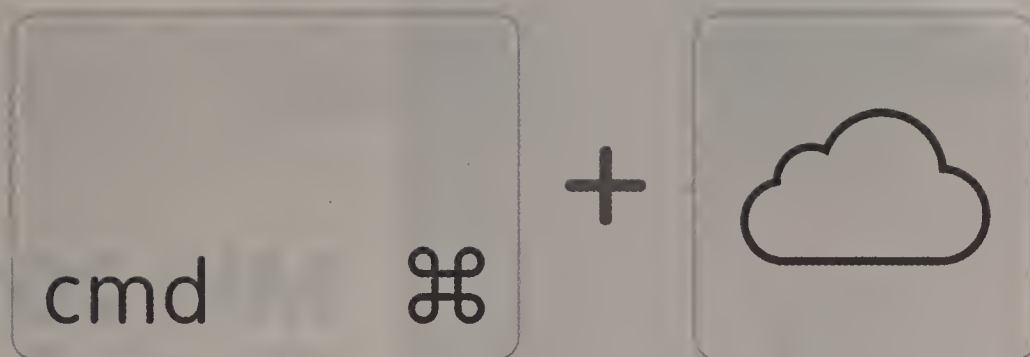
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Mid-2014 iMac Costs Less but Lags in Performance

Is a 15 percent lower price for an iMac worth a dramatic drop in speed?

BY JAMES GALBRAITH

W hen recommending (or sometimes not recommending) computers for purchase, I tend to focus on system performance. But the truth is, many people buy computers based largely on price.

After all, it doesn't take the horsepower of a high-end Mac to surf the Internet, run office applications, send email, and take care of other basic computing chores. Some buyers simply don't need to invest in the latest PCIe-connected flash storage, quad-core i7 processors, and discrete GPUs capable of supporting 4K video. Apple is focusing on such budget-minded users with its latest, lower-priced iMac.

**Apple
21.5-inch
iMac/1.4GHz
(Mid-2014)**

PRICE:
$1099

COMPANY:
Apple
apple.com

Until recently, the standard iMac lineup consisted of two 27-inch models and two 21.5-inch models. A third 21.5-inch iMac is joining the team.

Priced at just $1099—$200 less than the previous low-end iMac model—this new system is externally identical to the other current 21.5-inch iMacs, as well as those released in October 2012. It also has the same specs: a 5mm thin-edge design, a glossy 1920-by-1080-pixel IPS screen, four USB 3.0 ports, gigabit ethernet, two Thunderbolt ports, a headphone jack, and SDXC card slots.

TOUGH CHOICES

The trade-off for those ultrathin edges is that they leave no room on the side for peripheral ports, much less an optical drive. Especially on a desktop machine, I prefer having the convenience of front or side peripheral ports.

Under the hood, the compromises Apple has made to bring down the new system's price quickly become clear. In its internal specifications, the new low-end iMac has more in common with the latest MacBook Air models than it does with the rest of the iMac family. Whereas the $1299 iMac has a quad-core 2.7GHz Core i5 processor, the $1099 iMac has a dual-core 1.4GHz Core i5 processor. The $1299 model has a 1TB, 5400-rpm hard drive, while the $1099 iMac has a 500GB hard drive with the same rotational speed. The $1299 iMac's Intel Iris Pro integrated graphics are faster than the low-end model's Intel HD Graphics 5000.

The new system has limited configuration options, as it doesn't offer any incremental processor, graphics, or RAM upgrades. (You can upgrade the other iMacs in the line to 16GB at the time of purchase.) DIY-ers hoping to save a few bucks by installing their own RAM are

out of luck: The LPDDR3 RAM is soldered to the new iMac's motherboard. The RAM on the other 21.5-inch models is a bit hard to access, but it comes in two standard DDR3 DIMM slots. You can upgrade the new iMac from the standard 500GB hard drive to a 1TB drive for an extra $50; an additional $250 buys either 256GB of flash storage or a Fusion drive, which combines a 1TB hard drive with 128GB of flash storage.

NEW iMAC IS NO SPEEDSTER

To see how the new $1099 iMac's performance compares to that of the $1299 model, we put both to the test using our overall system benchmark suite, Speedmark 9. Not surprisingly, the lower-priced iMac system was slower than the $1299 iMac in every test, but the difference was pretty shocking.

The $1299 model's Speedmark 9 score was 54 percent higher than the new iMac's. In processor-intensive tests such as MathematicaMark, Cinebench CPU, and HandBrake, the low-end iMac's 1.4GHz dual-core i5 processor failed to keep pace with the quad-core 2.7GHz i5 in the $1299 iMac. The Intel Iris Pro integrated graphics in the $1299 iMac posted frame rates that were 37 to 56 percent higher than those of the Intel HD Graphics 5000 integrated graphics in the new $1099 iMac. The two systems were closest in performance in our file-copy test, but the $1299 model with its 1TB hard drive was still 9 percent faster than the low-end iMac.

We also tested a built-to-order system with all of the same specifications as the standard $1099 iMac, except that instead of the stock 500GB hard drive, this custom system had a 1TB Fusion Drive. The Fusion Drive promises the value and capacity of a traditional hard drive with the speedy performance of flash storage. Unlike typical hybrid drives, which have a few gigabytes of flash memory acting as cache, Apple's Fusion Drive pairs 128GB of flash storage with a 1TB hard drive. Our previous testing has shown that the Fusion Drive is as fast as a standard SSD in most situations.

As you would expect, in processor

Macworld Lab Tests
Speedmark 9 Scores

Model	Score
iMac/1.4GHz dual-core Core i5 (21.5-inch, Mid-2014)	116
iMac/1.4GHz dual-core Core i5 (21.5-inch, 1TB Fusion Drive, Mid-2014)	143
iMac/2.7GHz quad-core Core i5 (21.5-inch, Late 2013)	179
iMac/3.2GHz quad-core Core i5 (27-inch, Late 2013)	211
iMac/2.9GHz quad-core Core i5 (21.5-inch, Late 2012)	180
MacBook Air/1.4GHz dual-core Core i5 (11-inch, 256GB flash storage, Mid-2014)	139

Results are scores; higher scores are better. Reference models in italics. Stock configurations except for iMac/1.4GHz with 1TB Fusion Drive. Macworld Lab testing conducted by James Galbraith and Albert Filice.

and graphics tests, these two 1.4GHz iMacs performed similarly. In storage tests, however, big differences in performance emerged. The $1099 iMac's 500GB hard drive took 151 seconds to copy a 6GB set of files and folders from one section of the drive to another. The Fusion Drive finished the same task in just 41 seconds. Unzipping a compressed version of this data set took well over 3 minutes on the stock system, but only 67 seconds on the Fusion Drive–equipped system.

The Fusion Drive's superior performance helped the custom iMac post a 23 percent higher Speedmark score than the stock low-end iMac. The Fusion Drive was also much faster than the 1TB hard drive found in the $1299 middle-configuration iMac—70 percent and 45 percent faster in the copy and unzip tests, respectively. Unfortunately, the dual-core 1.4GHz i5 held the custom system back, so it was 20 percent slower overall than the $1299 iMac.

A few readers asked us to compare the new low-end iMac with a recent MacBook Air. The latest MacBook Air uses the same 1.4GHz dual-core Core i5 processor and Intel HD Graphics 5000 hardware as the new low-end iMac. The $1099 11-inch Air we chose has 4GB of RAM and 256GB of PCIe-connected flash storage. While the new iMac has double the storage capacity in its stock hard drive, the Air's flash storage com-

pleted our file-copy test in about a quarter of the time the new iMac took. In the graphics tests, however, the iMac's 8GB of RAM (versus 4GB on the Air) served it well: The iMac posted frame rates 11 to 15 percent higher than the MacBook Air's, and it was also faster in the iMovie test. Overall, though, the new low-end iMac was 17 percent slower than the $1099 MacBook Air.

BOTTOM LINE

Though the price of buying an iMac just went down, you have to weigh whether a 15 percent lower price is worth the sacrifice in performance. The answer will depend on your specific computing needs. This iMac offers the Mac's ease of use, stylish design, and seamless integration with iOS devices, and it will run most modern applications just fine. But the $1299 model has double the number of processing cores, running at nearly twice the clock speed, and it offers twice as much storage as the new iMac. At the time I wrote this review, the Apple Store was offering refurbished versions of the $1299 system for—you guessed it—$1099. ■

SLOWPOKE Apple's latest iMac is a little cheaper but a lot slower.

Why Apple Cares About Your Privacy

Apple puts a lot of effort into protecting data—and reaps the reward of consumer confidence in its products.

BY RICH MOGULL

With every iteration of OS X, iOS, and iCloud, we see Apple increasing privacy protections for its users. The company has consistently striven to empower its customers to protect their data from advertisers, government agencies, third-party developers, and even Apple itself.

Take a look at the fine print in Apple's official privacy policy (apple.com/legal/privacy), and you'll find that the company goes to enormous lengths to keep your personal information just that—personal, rather than fodder for marketing.

THE USER RULES

Even beyond that policy, Apple clearly indicated in the 2014 WWDC keynote that it intends to protect your privacy at every level. It has designed the extensions in iOS 8 so that they can't circumvent a user's privacy settings. In both HealthKit and HomeKit—Apple's new iOS frameworks for managing health and fitness apps and home devices, respectively—users control their own data and must give permission for any sharing. Touch ID makes sure that your fingerprint never leaves the device and that apps can never see anything stored in Secure Enclave. iOS 8 will offer the privacy-oriented DuckDuckGo search engine as a default option.

Apple also lets you NSA-proof your iCloud keychain (go.macworld.com/nsaproof), encrypts Messages and FaceTime calls end-to-end, and protects an employee's personal information even when the employer has activated mobile device management on work phones and tablets. And it has designed the iPhone without backdoors for law enforcement agencies.

Most tellingly, Apple plans to randomize the Wi-Fi hardware address of iOS devices to confound location and advertising trackers, which use such data to learn who you are (go.macworld.com/random). Some of these changes affect usability—for instance, approval boxes may pop up whenever an app wants to access your location data.

Why does Apple go to such lengths to shield privacy? I believe the motivation is profit, backed with a smidgen of righteous anger.

YOUR BUSINESS

Apple likely sees a competitive advantage in protecting user privacy, especially when its biggest direct competition comes from advertising giant Google and the enterprise-friendly Microsoft. Apple clearly believes that consumers not only desire privacy but will also give it significant weight in purchase decisions.

A set of principles emerges across Apple's security and privacy practices.

Keep customer data in the customer's hands: The customer owns his or her data, and vendors (including Apple) must ask for permission before collecting it or letting anyone else collect it.

Collect a minimum of data, anonymize it, and delete it when you no longer need it: For example, iOS associates Siri data with a random number, not with your Apple ID, and deletes stored voice data after six months.

Encrypt as much as possible without compromising usability: Mail and iWork for iCloud encrypt data, but they need to see it for cloud services to work. But Apple doesn't need to read iMessages, so it encrypts those end-to-end.

Don't leave any backdoors open: iOS encrypts all app data with your passcode and a secret hardware key that Apple doesn't track and can't recover.

Protect customer privacy: Across the board, Apple continues to add technology, such as iOS extensions, to enhance the platform without reducing user privacy. Apple even locked access to device IDs when developers appeared to be abusing the privilege.

A CRITICAL ADVANTAGE

These practices set Apple apart from Google or Facebook, which collect and store massive amounts of identifiable data as a business practice. The approach also separates Apple from Microsoft, which prioritizes enterprise customers over individual consumers. And it increases the trust consumers have in both Apple's hardware and the applications running on it. The company is leveraging its business model and technologies to create a difficult gap for its competitors to close. ∎
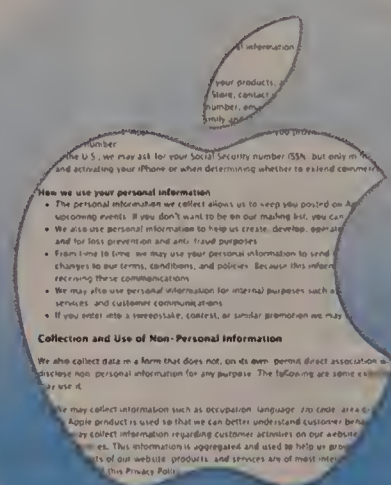
> **I believe Apple's motivation is profit, backed with just a smidgen of righteous anger.**
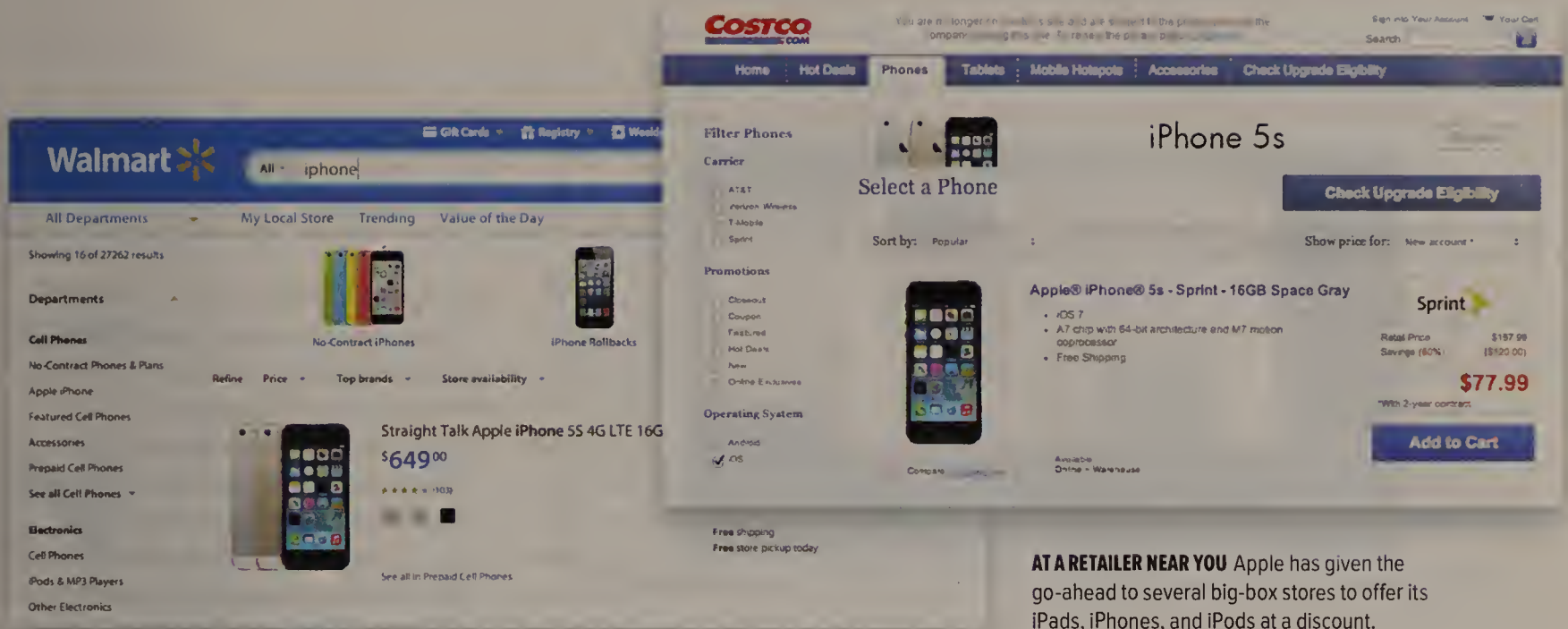
AT A RETAILER NEAR YOU Apple has given the go-ahead to several big-box stores to offer its iPads, iPhones, and iPods at a discount.

Prices on Apple Devices Mysteriously Drop

We speculate about why Apple products are showing up for less at certain third-party outlets.

BY MARCO TABINI

With rare exceptions, it's unusual to see non-Apple retailers offer Apple products at significant discounts.

And yet, recently, that's exactly what has happened.

For example, Walmart just cut its prices on Apple's mobile handsets. For $99, the retail giant will sell you a 16GB iPhone 5s and activate the device on AT&T's network; Apple's official $199 price for that same phone will set you back twice as much. If you're in the market for a 16GB iPhone 5c, which normally costs $99, the price drops even more, to a mere $29.

Along the same lines, retail warehouse chain Costco, which stopped selling Apple products in 2010, just announced that it has started carrying iPhones, iPads, and iPods again, and at even deeper discounts than Walmart's.

But that's not all: Apple itself seems to be experimenting with pricing. The new 1.4GHz, 21.5-inch iMac (see page 10), which retails officially for $1099, is $200 less than the previous entry-level model, and you'll find even lower prices at retailers such as Best Buy. Apple also

dropped MacBook Air prices $100 earlier this year. At the end of June the company slashed prices on the iPod touch models, and brought the 16GB version's features up to par with those of the rest of the line, at the new lower price (see page 28).

So what's going on with all these changes to Apple's pricing structure?

CRAZY LIKE A FOX

Over the years, the Cupertino giant has very carefully positioned its products on the market so that they usually have the same price tag, no matter where you purchase them (go.macworld.com/prodpos). The company has, by and large, eschewed the computer industry's race to the bottom, preferring to sell "affordable luxuries" at a cost that yields healthy profit margins and doesn't force it to compromise quality.

One explanation for the recent price fluctuations is that Apple may be clearing its current stock in anticipation of releasing new hardware this fall. That might explain the discounts on iPhones and iPads, but it doesn't jibe with Tim Cook's legendary prowess at keeping a tight rein on inventory—nor does it explain the introduction of less-expensive Macs and

an updated iPod touch. Why roll out updated offerings, only to replace them a few months later?

Another possibility is that Apple is feeling some pressure from competitors. Samsung's Android-based devices, for instance, go for considerably less than Apple's products do. However, considering that the South Korean company's management just described its second-quarter results as "not that good" (go.macworld.com/notgood), the competitive-pressure scenario seems unlikely.

A third option makes more sense: Multiple forces are coming into play. Apple's entire product lineup hasn't seen a significant refresh in a while, which has given the company plenty of time to optimize its production line and reduce manufacturing costs. Also, granting resellers a little freedom in how they price Apple wares generates buzz and keeps customers engaged while the company is readying new hardware releases. And a few well-timed discounts might bring more customers into the Apple ecosystem.

Whatever the reason, customers will welcome the lower prices—and Apple is keeping a confident hand on the reins. ∎

I'm Dreaming of a Pocket Mac

It's just a matter of time before the smartphone and desktop worlds come together—but what will that convergence look like?

BY BENJ EDWARDS

I have seen the future of desktop computing, and it is very small. Imagine a Macintosh the size and shape of a smartphone. Pull the unit out of your pocket, and it works like an iPhone with a touchscreen interface. Connect it to a wireless mouse, keyboard, and AirPlay monitor, and it provides a full-blown OS X desktop experience. And all this comes for the low, low price of $699 unlocked.

It's the MacBook Pocket, and I just made it up.

So far, Apple has strongly resisted the concept of merging touchscreen devices and desktop machines, choosing instead to keep its OS X and iOS platforms distinct. Apple's position makes sense: The hardware that's required to cram a satisfying OS X desktop experience into your pocket is not ready for prime time.

But pocket-size hardware grows more powerful every year, so before long it will be possible to use a smartphone both as a pocket device with a touchscreen and as a desktop replacement with a full-size monitor, keyboard, and mouse. When that happens, I think you'll want to have one of those devices.

DESKTOP ON THE GO

Over the past decade, smartphones have combined the powers of many formerly discrete devices—point-and-shoot cameras, video cameras, GPS receivers, voice recorders, PDAs, and cell phones—into one little unit. I believe that desktop and notebook computers, dedicated productivity machines, will join that list within the next decade. But first desktop systems must perform an amazing shrinking act.

That's just what is starting to happen. A number of companies currently pack ARM-based chipsets developed for smartphones into desktop computers the size of a USB stick (go.macworld.com/tinychip). On the x86 end of the market, devices such as the Gigabyte Brix (go.macworld.com/brix) and Intel Next Unit of Computing (go. macworld.com/intelnuc) have drawn upon notebook technology to shrink desktop

BUILDING BLOCK
The Gigabyte Brix offers desktop power you can hold in your hand.

machines into the palm of your hand.

A few commercial experiments in pursuit of this goal, such as the Motorola Atrix 4G and the Asus PadFone, have shown that the merger will be tricky. These types of devices don't benefit from a legacy desktop environment such as OS X or Windows, both of which offer millions of apps ready to run.

Meantime, Microsoft has thrown itself headfirst into the fray with its modern interface and its Surface line of tablets. That approach may position it well for the future of computing.

OPTIONS FOR APPLE

Last year Intel released a new series of low-power Atom CPUs for tablets (go. macworld.com/atomcpu). In theory, Apple could use an Atom CPU like the one in the Dell Venue 8 Pro and have a product out next year. But that unit wouldn't perform well enough to replace a low-end Mac mini, much less a Mac Pro. And Apple would want OS X on this theoretical device to reach the standards of its other products. We may not have to wait long for that to happen. My gut feeling is that within half a decade, the computing power of a battery-driven, pocket-size x86 system will equal or exceed that of a midrange Mac mini today.

There is another way in which Apple could bring the desktop experience to a pocket-size device: It could create a desktop app for its ARM-based iOS platform. First, however, the company would have to lift its long-standing ban on mice and trackpads in iOS. As the iPhone continues to expand in power, Apple may consider that option. ∎

Wi-Fi Standards Are Evolving at a Fast and Furious Pace

A new generation of high-speed routers is hitting the beach—and the next wave is right behind it.

BY ERIC GEIER

Now that blazing-fast routers based on the IEEE 802.11ac wireless networking standard are finally entering the mainstream, intrepid engineers are busily cooking up all-new hardware that will make the current gear's performance seem downright poky.

The truth is, most of the first 802.11ac routers were based on draft versions of the standard. Although some newer Wave 1 models, such as Netgear's six-antenna Nighthawk X6, are implementing cool tricks to squeeze more performance from that technology, Wave 2 802.11ac routers will hit in early 2015—and they will be a lot faster. The next standard, 802.11ax, is not far behind. There's no point in trying to cheat obsolescence by putting off your next router purchase, because the industry is always hard at work developing the current standard's successor.

NEW-WAVE TECHNOLOGY

What's so special about 802.11ac? For starters, it operates on the 5GHz frequency band, which is less crowded than the 2.4GHz band; as a result, its signal is less susceptible to interference.

In addition, its performance significantly exceeds that of the previous standard. SU-MIMO (single-user multiple-input/multiple-output) technology, one of the hallmarks of the older 802.11n standard, supports transmission of multiple spatial streams to a single client. This technology carries over to 802.11ac, which adds a more-powerful modulation technique to produce a maximum physical link rate of 433 megabits per second per spatial stream.

Because a Wave 1 802.11ac router can support up to three such streams simultaneously, it can send and receive data at a maximum physical link rate of 1.3 gigabits per second. A 802.11n router, in contrast, handles up to three spatial streams with a maximum physical link rate of just 150 mbps each (for aggregate throughput of 450 mbps).

The Wave 2 802.11ac routers, slated to arrive next year, will support MU-MIMO (multi-user multiple-input/multiple-output) technology, which allows them to transmit multiple spatial streams to multiple clients simultaneously.

The upcoming Wave 2 routers will also bond multiple channels on the 5GHz frequency band to create a single channel that provides 160MHz of bandwidth. (Wave 1 802.11ac routers can bond 5GHz channels, but the bonded channel is only 80MHz wide.) And whereas 802.11n and Wave 1 802.11ac routers support a maximum of three spatial streams, Wave 2 802.11ac routers support up to eight. Finally, Wave 2 routers will deliver maximum physical link rates in the range of 7 to 10 gbps.

NEXT IN LINE: 802.11AX

Although the Wi-Fi Alliance doesn't expect to ratify 802.11ax before March 2019, products based on a draft could reach the market as early as 2016.

One of the top objectives of 802.11ax is to quadruple wireless speed to individual network clients—not just to increase the overall speed of the network. The 802.11ax standard also aims to improve Wi-Fi speed and reliability in environments with many users, such as hotspots located in public venues. And the technology will use OFDMA (orthogonal frequency-division multiple access) to boost the amount of data a router can transmit.

WI-FI FOR EVERY NEED

The future of Wi-Fi centers on developing standards that meet the demands of wirelessly connected devices. Since future generations of devices will most likely include everything from enterprise printers to egg timers, we'll need all of the Wi-Fi flavors we can get. ∎

Wave 1 Routers
The current 802.11ac routers serve one device at a time.
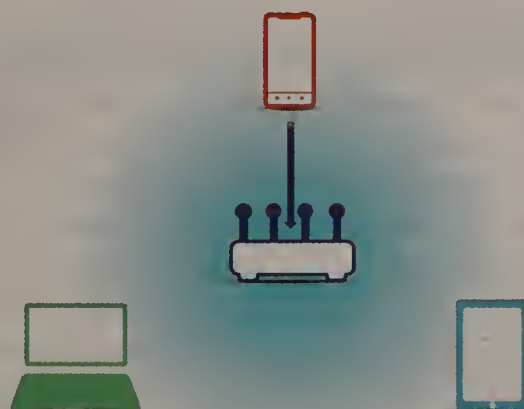
Wave 2 Routers
The next generation, due in early 2015, will serve multiple devices simultaneously.
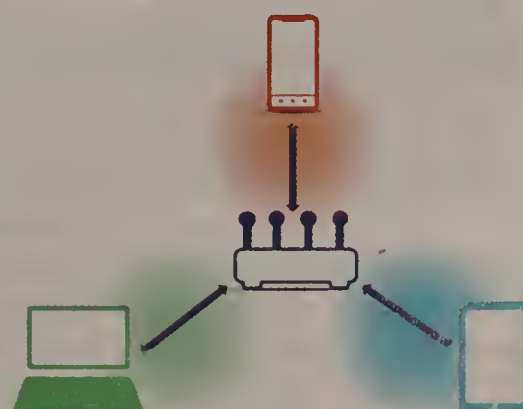
NEW WAVE WI-FI This illustration from Qualcomm, a maker of wireless telecommunications products and services, compares single-user and multiuser MIMO.

Reviews
The Latest Mac Products Reviewed & Rated

POWER OUTLET

PowerCube Is Cute but Lacks Surge Protection

Allocacoc Power- Cube Extended USB

♦♦♦½

PRICE:
$25

COMPANY:
Allocacoc
powercube-usa.
com

Allocacoc's PowerCube line of power outlets aims to supply all of your AC and USB charging needs in one tidy cube. I'll discuss the whole lineup, but my rating is for the $25 PowerCube Extended USB.

The PowerCube outlets, though neatly designed, lack true surge suppression and offer just a resettable fuse.

The company doesn't provide insurance, so if a power surge damages your devices while they're plugged into a Power-Cube, you're out of luck.

The PowerCube Original ($13) has AC outlets on five sides, but when plugged in to a wall outlet, the PowerCube itself consumes one AC outlet and blocks the second one.

The PowerCube Original USB ($20) offers two USB charging ports along with four AC outlets (you'll need to provide your own USB cables). Each USB port delivers 5 volts and 2 amps.

The Extended model ($16) has a five-outlet cube at the end of a 5-foot extension cord, while the Extended USB model ($25) offers four AC outlets, two USB charging ports, and the same cord. Plug one of these into a duplex wall outlet for a total of five outlets (the PowerCube Extended's plug doesn't block the second wall outlet). The PowerCube Extended is also available with a 10-foot cable ($20; USB version, $30).

These outlets are attractive, efficient, and well-priced. But if I had to pick between the PowerCube Extended USB and a model with surge suppression, such as the Tripp-Lite TLP606DMUSB (go.macworld.com/trippusb), I'd pick the latter.

—MICHAEL BROWN

HARD DRIVE

LaCie Rugged Thunderbolt Is as Tough as a Brick

LaCie Rugged Thunderbolt (500GB SSD)

♦♦♦♦½

PRICE:
$500

COMPANY:
LaCie
lacie.com

At first glance, LaCie's new Rugged Thunderbolt drive looks just like its predeces-sor, the Rugged USB 3.0 Thunderbolt Series, but the company has significantly improved this iconic drive. The two biggest additions are a captive Thunderbolt cable and a removable cap that conceals the cable and covers the USB 3.0 port.

The cap is made of the same orange, nonslip, rubbery material that sur-rounds the Rugged's edges and protects the drive against dust and splashing water. Under the cap is a USB 3.0 port and Thunder-bolt cable. You can pull the cable out and replace the cover to protect the USB port.

The cable is long enough to reach Thunderbolt ports easily. Returning it to its hiding spot is easy, and a little magnet hidden beneath the rubber holds the male end in place. The Rugged Thunder-bolt is bus-powered over both

USB 3.0 and Thunderbolt.

The height you can accidentally drop the drive from is now 2 meters instead of 1.2, according to LaCie. I dropped the drive from heights above 6 feet, even on asphalt, and the Rugged was still in working order. With the cap in place, I kicked dirt all over the drive, and I didn't find any debris in the ports after brushing it off.

The LaCie Rugged Thun-derbolt is a fast, portable drive with a reasonable price per

gigabyte, and it can handle just about any physical situation.—ALBERT FILICE

MAC GEM Mac Gems are apps that offer standout utility or unique features at a great price.

LaunchBar 6 Do-Everything Utility Gets Even Better

LaunchBar 6

🔷🔷🔷🔷🔷

PRICE:
Single license,
$29; five-system
license, $48;
upgrades, $19 or
$29, respectively

COMPANY:
Objective
Development
obdev.at

🔷 **MAC GEM**

Objective Development's LaunchBar is the most important utility I have installed on my Mac.

Using it to open an app works like this: Press a keyboard shortcut, and the bar appears. Start typing the application's name. In just a few letters LaunchBar figures out what you're looking for, and your app appears in the bar. Press <Enter>, and you're off to the races. The more you use LaunchBar, the more helpful it is, as it learns which apps and actions you require most often.

LaunchBar 6 is the utility's handsomest and most significant update yet. The new look is bigger, bolder, more readable, and more beautiful than ever.
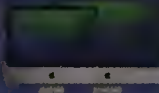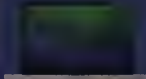
LaunchBar has long had the capability to search Google, Wikipedia, and any other site. It now offers live search suggestions, right within the app, just like what you see when doing a search on Google.

One of the most powerful and promising additions is the new custom actions feature. You can create custom actions in common programming languages (such as AppleScript or PHP), and then save them as LaunchBar Bundles, install them in LaunchBar, and share them with other LaunchBar users.
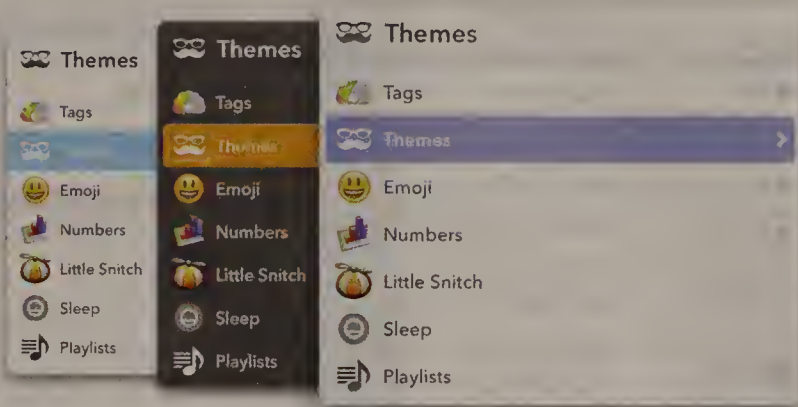
LaunchBar now offers deep integration with iCloud reminders: You can view, create, and even check off reminders from within the app. You can also create calendar events in it.

Unfortunately, you can't use natural language for time and date assignments. If you've ever used Fantastical, you'll miss that app's excellent natural-language parser.

LaunchBar helps you stay focused on doing your best creative work.—**SHAWN BLANC**

MACS: CURRENT LINEUP

PRODUCT	SPECS (STANDARD CONFIGURATION)	RATING	PRICE	DISPLAY	SPEEDMARK 9 [1]	MORE INFO
DESKTOP						
iMac	Intel Core i5/1.4GHz (dual-core)	🔷🔷🔷	$1099	21.5 inches	116	go.macworld.com/imac211414
	Intel Core i5/2.7GHz (quad-core)	🔷🔷🔷	$1299	21.5 inches	179	go.macworld.com/imac212713
	Intel Core i5/2.9GHz (quad-core)	🔷🔷🔷	$1499	21.5 inches	189	go.macworld.com/imac212913
	Intel Core i5/3.2GHz (quad-core)	🔷🔷🔷🔷	$1799	27 inches	211	go.macworld.com/imac273213
	Intel Core i5/3.4GHz (quad-core)	🔷🔷🔷🔷	$1999	27 inches	235	go.macworld.com/imac273413
Mac Mini	Intel Core i5/2.5GHz (dual-core)	🔷🔷🔷🔷	$599	Not included	n/a[2]	go.macworld.com/mini2512
	Intel Core i7/2.3GHz (quad-core)	🔷🔷🔷🔷	$799	Not included	149	go.macworld.com/mini2312
Mac Pro	Intel Xeon/3.7GHz (quad-core)	🔷🔷🔷🔷	$2999	Not included	291	go.macworld.com/macpro3713
	Intel Xeon/3.5GHz (six-core)	🔷🔷🔷🔷	$3999	Not included	323	go.macworld.com/macpro3513
PORTABLE						
MacBook Air	Intel Core i5/1.4GHz, 128GB	🔷🔷🔷🔷	$899	11 inches	131	go.macworld.com/air1281114
	Intel Core i5/1.4GHz, 256GB	🔷🔷🔷🔷	$1099	11 inches	139	go.macworld.com/air2561114
	Intel Core i5/1.4GHz, 128GB	n/a[2]	$999	13 inches	n/a[2]	go.macworld.com/air1281314
	Intel Core i5/1.4GHz, 256GB	🔷🔷🔷🔷	$1199	13 inches	138	go.macworld.com/air2561314
MacBook Pro	Intel Core i5/2.5GHz (dual-core)	🔷🔷🔷	$1099	13 inches	n/a[2]	go.macworld.com/macbook132512
	Intel Core i5/2.6GHz (dual-core), 128GB	🔷🔷🔷🔷	$1299	13-inch Retina	155	go.macworld.com/macbook1312814
	Intel Core i5/2.6GHz (dual-core), 256GB	n/a[2]	$1499	13-inch Retina	168	go.macworld.com/macbook1325614
	Intel Core i5/2.8GHz (dual-core)	🔷🔷🔷🔷	$1799	13-inch Retina	177	go.macworld.com/macbook132514
	Intel Core i7/2.2GHz (quad-core)	🔷🔷🔷🔷	$1999	15-inch Retina	n/a[2]	go.macworld.com/macbook15224
	Intel Core i7/2.5GHz (quad-core)	🔷🔷🔷🔷	$2499	15-inch Retina	282	go.macworld.com/macbook152514

[1] Speedmark 9 is Macworld Lab's standard test tool for benchmarking systems running Mac OS X 10.8 (Mountain Lion). For more information, see go.macworld.com/speedmark9. [2] Not yet tested.

QuickBooks App Bridges Online, Desktop Accounts

Quick-Books app for Mac

♦♦♦♦

PRICE:
Free; requires QuickBooks Online account ($13 to $40 per month)

COMPANY:
Intuit
intuit.com

QuickBooks app for Mac is a free tool that brings your Quick-Books Online data to your Mac. It's distinct from QuickBooks for Mac 2014—it's not a stand-alone application, and it requires a QuickBooks online account ($13 to $40 per month).

QuickBooks app provides a Mac-based front end to QuickBooks Online, and it requires an active Internet connection. (Intuit says future versions will allow you to work offline and sync changes later.)
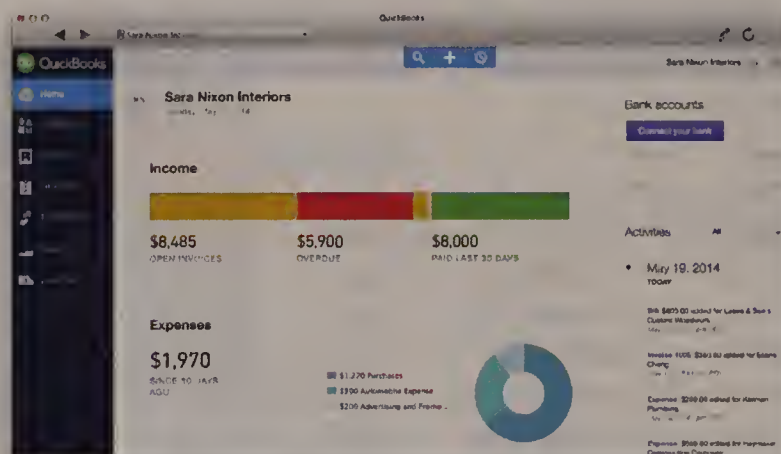
If you've used QuickBooks Online's latest interface, QuickBooks app for Mac will look familiar. The sidebar offers one-click access to QuickBooks Online's accounting and business management tools. The Home button provides a company overview with information on open, overdue, and recently paid invoices; current profit and loss; and expenses. Displayed at the right of the screen you see a list of accounts, current balances, and unreconciled transactions. Click any item on the Home screen to go to the list of associated transactions.

QuickBooks app for Mac offers forms customization, a weak point in most accounting applications. The app has four attractive form templates. You can manipulate colors and font sizes, as well as upload your logo.

One annoying aspect of QuickBooks app for Mac—true also of the online version—is that Intuit persistently shills for paid QuickBooks Online options, and you can't hide these reminders.

The simplicity of using a Mac app to access your online data makes Quick-Books app for Mac an excellent addition to a very good business accounting application.—**JEFFERY BATTERSBY**

Reeder 2 for Mac Presents RSS Feeds With Style

Reeder 2.0.1 for Mac

♦♦♦♦

PRICE:
$10

COMPANY:
Silvio Rizzi
reederapp.com

💎 **MAC GEM**

Silvio Rizzi's Reeder 2 for Mac presents a logical RSS hierarchy in a multi-pane interface: At the far left are your accounts; you can connect to feed-syncing services such as Feedly, Feedbin, Feed Wrangler, and Fever. (You can use Reeder without a sync service if you don't need to sync to multiple devices.) For each account, you can specify settings such as retrieval frequency or subscription sorting.

In the next pane from the left is a list of the feeds in the selected account, organized within any folders you've created. To collapse or expand a folder, click its disclosure triangle.

Reeder cycles between viewing unread articles, starred articles, and all articles via a three-way toggle control at the top of the window. I much prefer this approach to the list of starred items found in many other clients.

Selecting a news item hides the account pane, presenting a three-pane interface with the chosen article on the right. To see the original on the website, click the headline, and the feed item loads in a new pane on the right. To get back to a previous hierarchical level, use the left-arrow key or, on a
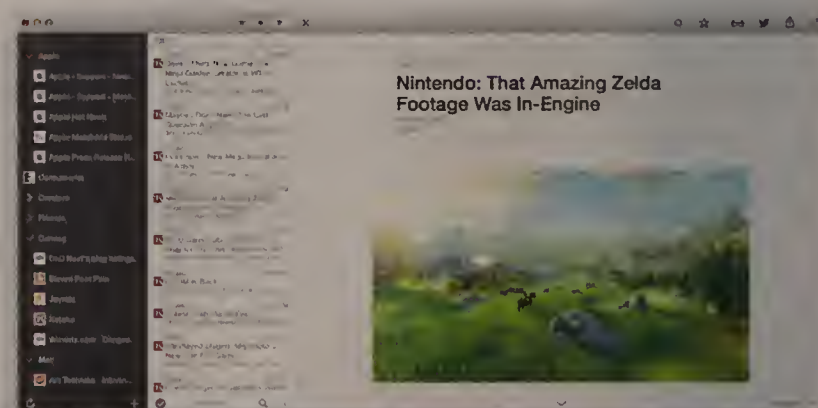
trackpad, a two-finger left-to-right swipe; use the opposite key or gesture to go deeper into a hierarchy.

Reeder's single-key shortcuts greatly speed reading, making it easy to quickly flip through unread items via the keyboard, starring items or marking them all as read. You can also customize shortcuts.

iOS-oriented users will appreciate Reeder's support for gestures, which you can configure for a whole host of actions. However, you have to configure OS X's trackpad settings so they don't interfere with Reeder's gestures. While this app may not have every feature under the sun, it does a fine job of streamlining the RSS experience.—**DAN MOREN**

UTILITY SOFTWARE

System Lens Lets You View CPU Usage With a Click

**System
Lens 2.51**

♦♦♦ ½

PRICE:
Free

COMPANY:
Aaron Ng
systemlens.
com

🔷 **MAC GEM**

Whenever the fans in my MacBook Pro suddenly rev up, I use the built-in Activity Monitor app (*Applications → Utilities*) to see what's going on. But I've often wished for a quicker and easier way to check my Mac's activity—something like System Lens.

This free app resides in the menu bar. When you click its icon, you see a snapshot of which apps are actively using your computer's resources.

System Lens doesn't offer all the features or flexibility of Activity Monitor. For example, while Activity Monitor provides hard numbers about how much processing power an app is using (such as the CPU percentage or number of threads), System Lens uses simple labels: Low, Medium, and High. For people who want precise details, System Lens won't replace Activity Monitor completely. Similarly, while Activity Monitor lets you quit or force-quit an app, System Lens only gives you the option to force-quit, which means you don't get a chance to save your work.

The app's simplicity is also

helpful. Activity Monitor's list of processors shows everything that's running on your computer, including background processes, and contains many items you shouldn't quit. By default, System Lens shows only foreground apps currently using at least 1 percent of

CPU resources. If you want to omit a particular app from the list, you can create a filter for it in System Lens's preferences window.

To prevent System Lens itself from hogging your processor's resources, the utility displays only snapshots of your system—it doesn't update in real time. This means System Lens can't monitor processor usage over a period of time, but it's useful for seeing what's happening at a given moment.

System Lens is limited, but if you just want to see your processor activity on a very basic level, you might want to give it a try.–**ROMAN LOYOLA**

Toshiba Canvio AeroMobile Is Featherlight, Superfast

Toshiba Canvio AeroMobile

🔌🔌🔌🔌

PRICE:
$150

COMPANY:
Toshiba
toshiba.com

The idea of marrying a portable storage device to a wireless hotspot isn't a new one. The feature that sets Toshiba's Canvio AeroMobile portable Wi-Fi media streamer apart is its blazing-fast SSD, which also reduces its weight to a mere 4.23 ounces.

The SSD delivers only 128GB of storage, whereas its platter-based competitors offer 500GB, 1TB, or more. But it's lightweight, fast, shock-resistant, and much less susceptible to data corruption. An SD card slot allows you to augment the device's internal storage, as well as play media stored on SD cards.

Styled in bright silver, the AeroMobile measures a little under 5.0 inches long, 2.5 inches wide, and a mere half-inch thick. The unit offers only a single Micro-B USB 3.0 port, so it's not suitable for charging mobile devices. It has an on/off button; status lights for power, charging, and Wi-Fi connectivity; and a recessed reset button.

The drive has its own Web portal, streams any format your browser can handle, and downloads other formats. It streamed my 30GB MKV rip of *Master and Commander* for an incredible 14 hours.

The device's clean, friendly Web portal keeps mobile and touch devices in mind when it sizes elements. The portal has facilities for photos, video, and music display and playback, as well as accessing stored documents. The drive also performs well as a simple storage device.

The AeroMobile is pricier than most streaming hard drives, has limited capacity, and won't charge your phone. But its diminutive size and weight, outstanding runtime, speed, and cleanly designed Web interface outweigh those negatives.—JON L. JACOBI

HARD DRIVE

Western Digital My Cloud EX2 Is a Pedestrian Performer

Western Digital My Cloud EX2 (4TB)

♦♦♦½

PRICE:
$370

COMPANY:
Western Digital
wdc.com

The Western Digital My Cloud EX2 is designed for consumers who want the convenience of cloud-based storage, but don't want to store files on servers outside their physical control. In terms of its friendly user interface and easy remote access, this NAS box has few peers, but its performance leaves something to be desired.

The EX2 is a dual-bay (two-drive) box available in 4TB ($370), 6TB ($470), and 8TB ($570) flavors. The drives come configured as RAID 1, which writes the same data to both drives, so the 4TB model reviewed here actually yields 2TB of storage. You can also reconfigure the drives as RAID 0, which writes data in a strip across both drives. RAID 0 delivers higher performance and more capacity, but a failure of either drive can result in complete data loss.

All three capacities have two USB 3.0 ports for expanding storage and backup, plus a single gigabit ethernet port. You can also back up one EX2 to a remote EX2 or to a four-bay My Cloud EX4.

The EX2's best feature is its ease of access. To get to your EX2's storage from other PCs, you use the WDMyCloud.com portal. For Android, iOS, or Windows Phone 8, you use the WD My Cloud app.

The EX2's feature set is focused, advanced, and extensible via apps. It includes support for multiple users, shares, and DLNA and iTunes media servers.

The EX2 performed decently when reading and writing large files, but when dealing with a mix of smaller files and folders, its results were significantly lower than average, especially in terms of the read number.

Western Digital designed the EX2 to be easy to use while delivering a decent feature set for small businesses and corporate workgroups. But its mundane performance renders it not ready for prime time beyond the advanced consumer space.—JON L. JACOBI

PRODUCTIVITY SOFTWARE

Write for Mac Note-Taking App Supports Markdown

Write for Mac 1.0.2

♦♦♦♦

PRICE:
$10

COMPANY:
Tanmay Sonawane
writeapp.net

Tanmay Sonawane's new $10 Write lets you focus on your words, shutting out distractions on your computer.

With Markdown support and the capability to share texts in a wide variety of formats, Write offers powerful text-editing features wrapped up in a note-taking context.

Along the left side of Write's single-window interface you'll see a list of locations where you've stored files. To use the companion iOS app and sync documents between iOS and Mac, you'll want to opt for Dropbox or iCloud, but you can work with files in any folder and in multiple locations.

The middle column lists the notes in the selected location, along with a short preview of each. The large editor pane on the right side shows the selected note's text. Write also offers a full-screen, distraction-free mode.

You can view text in three modes: plain text, Hybrid, and Rich MD. Hybrid mode shows Markdown formatting characters. Rich MD mode shows your text in Markdown-styled format, but hides the actual syntax. In this mode, you can use keyboard shortcuts to apply styling such as bold, italics, and headers. Write also offers an HTML-preview mode and many options for exporting notes to other formats, including RTF, HTML, and PDF; you can attach exported documents to a new email or a message in iMessage.
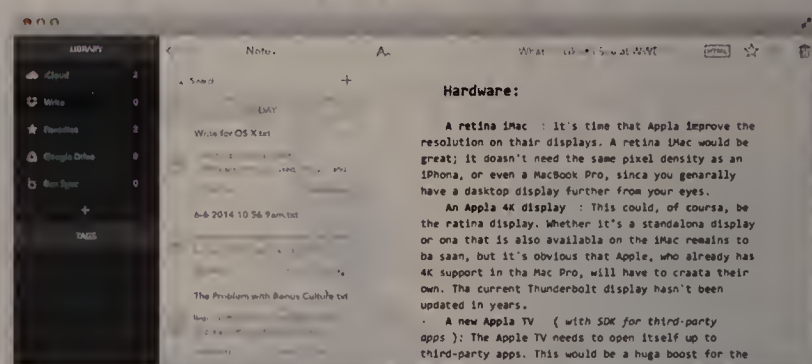
A word-count display in the edit pane's footer displays statistics about the current document. You can also organize files by assigning tags to them.

As good as it is, Write isn't perfect. Its single-window style means you can't use another app, such as Marked 2, for Markdown previews. Also, you can't edit Markdown text and preview its HTML equivalent simultaneously.

If you're in need of a good app for composing and storing notes, Write might be just the ticket.
—KIRK MCELHEARN

Hot Stuff

What We're Raving About This Month

iMouse G3 Illuminated Gaming Mouse

Adesso's $20 six-button USB mouse lights up in three colors: blue, green, or red. It offers four optical settings: 800, 1200, 1600, or 2400 dpi (adesso.com).

—ROMAN LOYOLA

COMPLEMENT

MCE Technologies' $299 USB storage device contains a 2TB hard drive, an optical drive that can read Blu-ray discs and burn DVDs and CDs, an SD card reader, and a USB hub with two USB 3.0 ports and one USB 2.0 port (mcetech.com). —ROMAN LOYOLA

MAC PRO SECURITY LOCK ADAPTER

Apple's $49 attachment isn't itself a lock; it merely adds a standard Kensington lock port to the Mac Pro. Apple says the adapter is compatible with most standard Kensington locks, as well as locks from third parties that use the same system (apple.com).

—DAN MOREN

Pedal to the Metal: Inside Apple's New Graphics Technology

Metal had an eye-catching demo at WWDC, but here's what the new tech means for users.

BY GUY ENGLISH

Amid the busy presentation of new technologies at this year's Worldwide Developers Conference, Apple's Metal graphics tech probably had the most attractive demo, even if its exact benefits were difficult to understand.

In short, Metal is Apple's new method of programming its graphics processors. The company claims that Metal offers performance gains without hardware changes, and also says that games will be more detailed while still rendering at 60 frames per second. It sounds like magic—but it's the real deal.

THE OLD STATE OF THE ART

Metal, as its name suggests, unlocks the hardware, the "metal," of the A7 processor.

Think of graphics processors as "state machines": Imagine a board filled with 1970s-style switches and dials, each labeled with a feature. The machine doesn't support all feature combinations, but you can try flipping switches and turning dials to see what happens. The set of switches and dials you've tweaked determines the "state of the system."

The job of the graphics programmer is to flip the right switches, turn the dials just so, and feed the processor with geometry data. This is the sequence that Apple is referring to when noting how many more "draw calls" per frame Metal is capable of.

With OpenGL, the current standard for creating graphics, programmers must flip each switch and tweak each dial individually. Every time they do so, the graphics processor has to confirm that the state of the machine is still valid.

In contrast, by using Metal, programmers can define the state they need the machine to be in and then apply that state. They can bid farewell to flipping each switch, tweaking each dial, and jumping through the correct hoops.

THE MAGIC OF METAL

Metal is designed around how GPUs and CPUs—and especially Apple's A7—work today. The A7 combines the GPU and CPU into one chip, and the two processors share a single memory pool.

Much of OpenGL is predicated on the notion that the GPU is on a separate card. By recognizing that the GPU and CPU can access the same memory, Metal unlocks a lot of power. Managing the resources for drawing becomes vastly easier and faster. Many effects, such as reflections, require drawing the scene into an image and then using that image as an input in the final scene. Metal makes that task far simpler.

Modern GPUs and CPUs have multiple cores, and Metal helps to employ all of that power by allowing for the multiprocessing of graphics commands. OpenGL is single-threaded and can't use the hardware in a similarly adept way.

Metal also supports a model of "general-purpose graphics unit computing," or using the GPU to run software that isn't necessarily graphics-related. And just as Metal offers benefits over OpenGL, it also provides advantages over OpenCL, the open standard for writing software that executes on GPUs. With the general-purpose computing capabilities of Metal,

BROAD SUPPORT At WWDC, Craig Federighi noted that major game companies are supporting Metal.

we'll see the A7 shine in unexpected ways. Apps such as the music tool Capo, for instance, will be able to leverage the GPU on iOS as they do on OS X in order to accomplish software tasks that previously hadn't been possible.

BENEFITS FOR ALL

What do these changes mean for iOS device users? For now, we don't know exactly what kinds of opportunities we'll discover, but we are entering a brave new world that's full of possibilities.

Metal will lead to concrete benefits that users will certainly appreciate, including faster load times (owing to better resource management, precompiled shaders, and the like), more detailed game worlds (thanks to the faster draw calls, more stuff can happen or appear), and likely a ton of applications that can use the GPU as a computational platform.

Of course, none of those apps will show up just because Metal has arrived. Developers will need to adopt the new system and write software for it. But the good news on that front is that major game companies on the iOS platform have already demonstrated their

commitment: Unreal and Unity, the two biggest game engines, have announced support for Metal. So even without developers investing in understanding and implementing an engine with Metal, many big games that use those engines will benefit from its improvements.

Metal also has interesting political implications. With Metal, Apple is taking its destiny into its own hands (as it often does). Rather than remaining tied up with The Khronos Group, the body responsible for OpenGL and OpenCL, Apple is freeing itself to make changes to Metal as quickly as it likes in order to best address the needs of its hardware.

This is a significant strategic move that indicates Apple believes it has the developer base and enough devices in the field to forge its own path. This move also signals Apple's growing interest in the gaming market. Apple has never had a great platform for gaming, but with iOS that has changed—and Apple seems to be changing too. Apple's investment in Metal development and support shows that the company is now taking gaming very seriously indeed.

None of this is to say that OpenGL and OpenCL will disappear, or that they won't serve their own purposes. We still have many applications for which they are perfectly suited. But Metal is a lower-level, more-accurate model of modern processors such as the A7. And once we see apps that use Metal, we'll discover what the A7 is truly capable of. ∎

Game
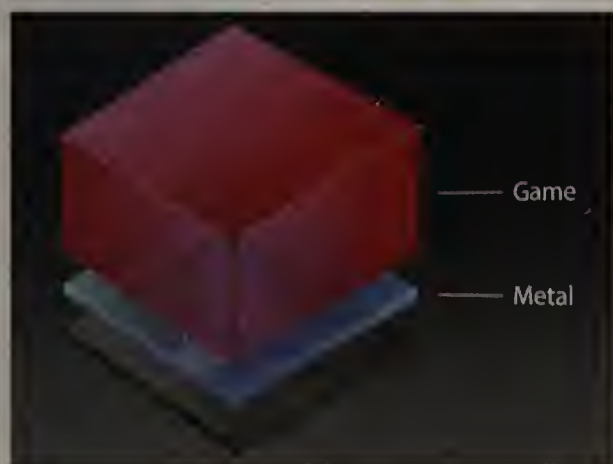
Metal

In comparison with OpenGL, Metal is a lower-level, more-accurate model of modern processors such as the A7.

Apple Drops iPod Touch Prices, Revises 16GB Model

BY DAN MOREN

FULL SPECTRUM The 16GB model now comes in several colors and has a rear camera.

The low-priced hits just keep on coming. Apple in late June announced a new $199 version of its 16GB iPod touch and dropped prices on the 32GB and 64GB models by $50 and $100, respectively.

If you've forgotten "The Strange Case of the 16GB iPod touch," don't feel too bad: The $229 model debuted in May 2013 with a few...peculiarities. For one thing, it had no rear-facing camera, just the front-mounted FaceTime HD camera. It also eschewed the iPod touch loop connector that its siblings sported, and came in just a single color, silver.

Now Apple has consigned that one-off to the dustbin of history. Debuting in its place is a full-featured 16GB iPod touch that comes in all the colors of the rainbow—well, in the same blue, pink, silver, space gray, yellow, and Product Red that the 32GB and 64GB models come in—and provides the same 5-megapixel iSight camera and loop connector that the other models do. (The wrist strap is not included as it is with the more expensive units.) This version is more or less the 16GB iPod touch that we should have had all along—and it's $30 cheaper.

Meanwhile, the 32GB and 64GB models now cost $249 and $299, respectively, making them more affordable than ever. This price drop comes on the heels of Apple's new entry-level iMac (see page 10) and repriced MacBook Air—the company seems to be applying the theme of a lower cost of entry to its assorted product lines across the board. (You could include last year's iPhone 5c as a data point as well.) In some ways, that's no surprise—Apple does usually lower the prices on its products as they age—but it also strikes me as a trend emblematic of Tim Cook's Apple.

The big question is whether any of these new prices are indicative of moves we might see for the iPhone this fall. While the 16GB iPod touch now comes in at the same price as a 16GB iPhone 5s, the 32GB and 64GB iPods are now cheaper than iPhones of equivalent storage capacities. Granted, the iPhones' prices are subsidized—which makes the iPod touch prices that much more impressive. But as we users become more demanding about what we want in our iPhones, that 16GB base model is starting to seem more and more paltry. ■

iOS DEVICES: CURRENT LINEUP

PRODUCT	SPECS	RATING	PRICE [1]	DISPLAY	MORE INFO
iPad Air[2]	16GB	Wi-Fi, ●●●●½	Wi-Fi: $499; Wi-Fi and cellular: $629	9.7-inch color (Retina)	go.macworld.com/ipadair
	32GB	Wi-Fi, ●●●●½	Wi-Fi: $599; Wi-Fi and cellular: $729	9.7-inch color (Retina)	go.macworld.com/ipadair
	64GB	Wi-Fi, ●●●●½	Wi-Fi: $699; Wi-Fi and cellular: $829	9.7-inch color (Retina)	go.macworld.com/ipadair
	128GB	Wi-Fi, ●●●●½	Wi-Fi: $799; Wi-Fi and cellular: $929	9.7-inch color (Retina)	go.macworld.com/ipadair
iPad 4th Generation	16GB	Wi-Fi, ●●●●½	Wi-Fi: $399; Wi-Fi and cellular: $529	9.7-inch color (Retina)	go.macworld.com/ipad4
iPad Mini	16GB	Wi-Fi, ●●●●	Wi-Fi: $299; Wi-Fi and cellular: $429	7.9-inch color	go.macworld.com/minirev
	16GB	Wi-Fi, ●●●●½	Wi-Fi: $399; Wi-Fi and cellular: $529	7.9-inch color (Retina)	go.macworld.com/miniretina
	32GB	Wi-Fi, ●●●●½	Wi-Fi: $499; Wi-Fi and cellular: $629	7.9-inch color (Retina)	go.macworld.com/miniretina
	64GB	Wi-Fi, ●●●●½	Wi-Fi: $599; Wi-Fi and cellular: $729	7.9-inch color (Retina)	go.macworld.com/miniretina
	128GB	Wi-Fi, ●●●●½	Wi-Fi: $699; Wi-Fi and cellular: $829	7.9-inch color (Retina)	go.macworld.com/miniretina
iPhone 4s, 5c, and 5s	8GB 4s[3]	●●●●	Free	3.5-inch color (Retina)	go.macworld.com/iphone4s
	16GB 5c[4]	●●●●	$99	4-inch color (Retina)	go.macworld.com/iphone5c
	32GB 5c[4]	●●●●	$199	4-inch color (Retina)	go.macworld.com/iphone5c
	16GB 5s[4]	●●●●½	$199	4-inch color (Retina)	go.macworld.com/iphone5s
	32GB 5s[4]	●●●●½	$299	4-inch color (Retina)	go.macworld.com/iphone5s
	64GB 5s[4]	●●●●½	$399	4-inch color (Retina)	go.macworld.com/iphone5s
iPod Touch 5th Generation	16GB	●●●●½	$199	4-inch color (Retina)	go.macworld.com/touch5
	32GB	●●●●½	$249	4-inch color (Retina)	go.macworld.com/touch5
	64GB	●●●●½	$299	4-inch color (Retina)	go.macworld.com/touch5

[1] All prices are Apple's prices. [2] Separate Wi-Fi–and-cellular iPad models are available for AT&T's network and for Verizon's. [3] This phone is available only with an AT&T plan. [4] These models are available with an AT&T, Sprint, or Verizon plan.

Hit the Road, Jack: Retiring the Classic Plug

Apple's creation of a standard for Lightning-powered headphones may signal the end of the traditional jack.

BY MARCO TABINI

With new iPhone and iPad hardware likely waiting in the wings for this fall, word on the street is that Apple has added headphones to the list of "Made for iPhone" (go.macworld.com/mfi) accessories that can plug into an iOS device via Lightning. Such a development could mean that the venerable headphone jack is finally on its way out.

Yes, the jack's disappearance would render many accessories obsolete. But the removal of the jack may, in the long run, be a change for the better.

Although its existence makes sense in an analog world, the standard jack adds little to the listening experience on today's mobile devices, which generate all audio digitally. In fact, its presence has interfered with Apple's design goals in the past. The original iPhone, for example, had a recessed jack that was incompatible with some plugs.

The jack is also a gaping hole. Dust can settle inside, jamming the works and leaving the handset stuck in headphone mode; plus, if excessive moisture gets in, your device could suffer permanent damage.

THINNER, LIGHTER, SMARTER

Removing the jack from iOS devices could provide direct benefits to consumers. First, Apple could reclaim the jack's space and use it for other purposes, such as making iOS devices thinner or, perhaps, reorganizing the devices' components to create more room for a bigger battery.

Switching to Lightning-powered headphones could also mean richer controls for volume and playback. Until

END OF THE LINE Upcoming iOS device designs may finally eliminate the standard headphone jack.

now, the clever use of analog signals over multisegmented connectors has made such controls possible, but that approach has its limits. With Lightning's fully digital interface and ability to provide power, in contrast, manufacturers might be able to create headphones with advanced displays or improved sound reproduction. (However, such functions might consume any extra battery power that Apple could get from freeing up the space the standard jack currently occupies.)

Presumably, Apple would bundle newer devices with Lightning-connector earbuds, or, even better, a headphone-jack–to-Lightning converter, making the transition a bit less traumatic.

I can also think of a couple of reasons why a switch away from the jack might benefit Apple. The first is that the Lightning connector is completely under Cupertino's purview. Apple can apply quality control to third-party products, and limit their ability to tap into a market of hundreds of millions of customers without paying royalties. This means that (unless one resorts to gray-market products) Lightning earphones are likely to be pricier than their standard-jack counterparts, and that they will help to lock users into the Apple ecosystem.

The second reason is that Apple just sank $3 billion into a company whose primary product is earphones. It would be naïve to think the Beats deal would not factor into a switch to Lightning connectors on all iOS devices and present Apple with the chance to make a small fortune.

A GOOD TRADE-OFF

Ultimately, the switch to Lightning may be a positive move. I wouldn't mind ditching the old jack in exchange for a thinner iPhone that is less susceptible to water and dust—it's the kind of improvement that I'd expect Apple to make, and one that would induce me to spend some cash on an adapter for my expensive noise-canceling Bose earbuds. ∎

> Switching to Lightning-based headphones could mean richer controls for playback.
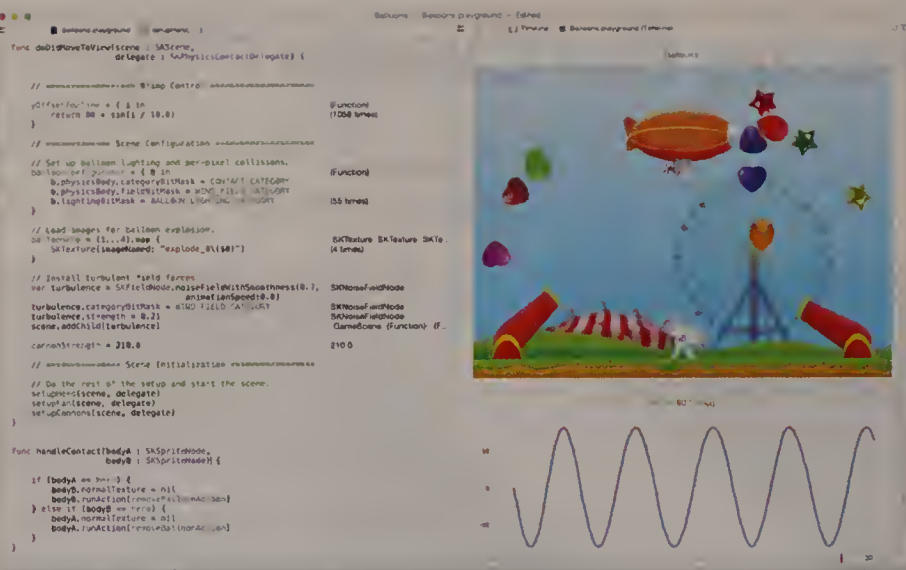
SPEAKING THEIR LANGUAGE Apple seems ready to engage developers and to get them interested in Swift's growth and potential.

The Swift Blog Signals Apple's New Focus on Developers

BY MARCO TABINI

It's not every day that we get to witness dramatic change happening quietly at Apple, but that's what occurred in mid-July as the Swift team launched its own official blog (developer.apple.com/swift/blog).

The Swift programming language, announced at this year's Worldwide Developers Conference, is meant to modernize the way developers build their apps by adopting paradigms that other languages have supported for a long time.

The new blog is notable for two reasons. The first is that it's unprecedented. Although Apple's Developer Connection website has had a blog for many years, its contents are generally limited to formal communications. Outside of WWDC and the occasional Tech Talk tour, Apple's relationship with developers has been so sterile that something as informal as a blog seems almost like a little prank.

The second reason is that the Swift blog signals just how invested Apple is in its new language, and how much company management wants it to succeed.

Judging from my brief exposure to Swift, I'm sure Apple has committed a significant amount of time and resources to it—particularly considering that the company had to adapt thousands of

APIs for everything from graphics drawing to hardware communication so that those items would work seamlessly with Swift.

Clearly, Swift isn't just an experiment. It's the tool with which Apple wants to see tomorrow's apps built, and Apple will give it a great deal of care and love.

THE KEY TO SWIFT'S SUCCESS

Money and programming resources won't be enough to give Swift the boost it needs to succeed. Unlike languages that enjoy broad use, such as Java, Swift is purpose-built to satisfy the specific needs of Apple's platform.

To thrive, Swift needs developer buy-in. Apple can achieve that only by making programmers as invested in the language's growth and evolution as possible. I wouldn't be surprised if the Swift blog were but the opening salvo in a barrage of initiatives aimed at getting developers acquainted with a future in which every app is built in Swift.

Regardless of the motivations behind it, this blog's debut is great news. Apple's attitude toward developers has improved by leaps and bounds since WWDC, and this change can only mean that the tools and resources available to programmers will continue to improve at a rapid pace. ∎

MONTY PYTHON'S THE MINISTRY OF SILLY WALKS

We're not sure what the point of this $1 iOS game (go.macworld.com/sillywalks) is supposed to be. All we know is that this Boondoggle Studios title is based on one of the best Monty Python sketches ever—and that it features voice acting from John Cleese. So it should be a good time!—JOEL MATHIS

HEADSPACE.COM

Version 2.0 of this free meditation app (go.macworld.com/headspace) for iPhone contains hundreds of hours of new content, including "meditation packs" addressing particular challenges in the areas of health, performance, and relationships. The end result? The app's developers say you'll "stress less, sleep more, and focus better than ever."—JOEL MATHIS

FLY

Fly (go.macworld.com/fly), a free offering for iPhone from Fly Labs, lets you edit short movies on the fly (natch). Choose up to four video clips from your Camera Roll, and you can add dissolve transitions, split-screen and picture-in-picture effects, voice-overs, and music. You can trim and rearrange clips as well, and you can even share clips with other Fly users to make multicamera videos.—JOEL MATHIS

CIVILIZATION REVOLUTION 2

Civilization Revolution 2 ($15; go.macworld.com/civrev2) for iOS, from 2K, has more of what made its predecessor such a popular strategy game: more military might, more kinds of buildings to construct, more types of technology to apply to your growing empire, and more "scenario challenges" that let you reenact key moments from history.—JOEL MATHIS

Classy and Clever Cases

This month's selection of iPhone cases includes stylish leather offerings and unusual designs.

BY MARCO TABINI

Zach Wallet

True Religion's leather Zach Wallet ($70; go.macworld.com/zachwallet) for the iPhone 5 and 5s provides three pockets for stashing credit cards and cash. You can position its built-in stand at different angles, and its soft microsuede interior helps to keep your phone's surfaces clean.

ENGRAVED WOODEN COVER

You can personalize Sophia Victoria Joy's Wooden Cover (about $71; go. macworld.com/svjwooden) with up to nine words arranged to create an eye-catching pattern. Custom-made from bamboo to fit the iPhone 4, 4s, 5, or 5s, the case offers a tactile feel, and the laser-engraving technique ensures a perfect finish.

HOCKEY PHONE CASE

The Original Stix Hockey Phone Case ($44; go.macworld.com/originalstix) for the iPhone 5 and 5s consists of a frame in which two fragments of real hockey sticks—previously used in professional or college games—are embedded. The tough polycarbonate frame offers excellent protection from bumps and scratches.

SNAP CASE HAWAIIAN

This Huf X Incase Snap Case ($40; go.macworld.com/incasehi) for the iPhone 5 and 5s features a tropical-island motif. The case's open-ended design makes docking easier, and durable plastics promise long-lasting protection for your handset.

Bruno

Blacksmith-Labs' Bruno Belt Clip Holster ($80–$120; go.macworld.com/bruno) for the iPhone 5 and 5s securely attaches to your clothing with a sturdy metal clip. Each case sports a metal button that closes the flap for extra protection. The clip and button come in brushed gold, gunmetal, or chrome; the case is available in several colors and styles.

Fritzframe

Right Move Gadgets' Fritzframe ($99; fritzframe.com/en) has an innovative, twistable design that allows you to hold your iPhone 5 or 5s at different angles to better capture pictures or video. Made with aircraft-grade aluminum for maximum durability, the lightweight case can also serve as a stand or hook.

Reviews
The Latest iOS Products
Reviewed & Rated

IPAD STYLUS AND RULER

Ink and Slide: Adobe Revitalizes the Stylus Market

Adobe Ink and Slide

♦♦♦♦

PRICE:
$200

COMPANY:
Adobe
adobe.com

Adobe bundles its Ink stylus and Slide ruler together instead of selling them separately. And that's a shame: While the Slide is the kind of unique accessory many people will want, the Ink is just a pretty good iOS pen. That's not to say the package isn't worth picking up, though.

The Ink's tricorner aluminum design is as functional as it is fabulous, and the curves make for a surprisingly comfortable grip. Its 3mm Adonit Pixelpoint plastic nib glides easily on an iPad screen, yet it provides excellent resistance and feedback. It works in any app, but to dig into its features, you have to use it inside Adobe's Sketch and Line apps (see the review below).

The Ink's one letdown is its precision: I couldn't get it to trace the same line consistently. Sometimes it wiggled and wobbled and drew a full line's width away. If the fault is in the software calibration, an update could fix the problem.

As for the Slide, I was skeptical of the need for a Bluetooth "ruler," but I came around quickly. When you use the metal-and-plastic tool inside a compatible app, such as Sketch or Line, it becomes a straight-edge ruler for your finger or stylus. The Slide glides across the "canvas," and when you draw against the edge, it feels much like tracing against construction paper. The effect is especially pleasing in the Line app, which looks as if it was made to show off the Slide's true capability.

The first iteration of the Ink and Slide may not be must-buy items, but they are impressive entries in a field crowded with ordinary rubber-nib offerings. And they have great potential.
—SERENITY CALDWELL

DRAWING APPS

Adobe's Sketch and Line Master Drawing and Drafting

Adobe Sketch

♦♦♦♦

Adobe Line

♦♦♦$\frac{1}{2}$

PRICE:
Free

COMPANY:
Adobe
adobe.com

Adobe may have created Sketch and Line as vehicles for its new stylus and ruler (see above), but they stand on their own as fantastic apps for drawing and drafting enthusiasts.

The beautifully constructed Sketch looks like Paper's minimalistic cousin. Its digital drawing tools (a pencil, a pen, ink, a marker, and an eraser, plus a color picker) are nicely thought-out renderings that come close to the standard that Paper set last year.

Sketch's big draw (no pun intended) is its pairing with the Ink and Slide. The Ink's pairing process is seamless, and you can customize the stylus's colored top and see its battery life inside the app. The Slide pairs and unpairs whenever it makes or loses contact, respectively, with the iPad. For those users without Adobe's accessories, Sketch offers the digital Touch Slide, which works well for drawing straight lines.

While Sketch is a solid program, the Line drafting app is a masterwork with incredible power. Line's tracing tools include a 2H pencil and an HB pencil, a 0.25mm pen, and more. And oh, the things you can trace. Lines, shapes, French curves, polygons, Herman Miller chairs—the possibilities are enormous.

Tracing works with the Touch Slide or the physical Slide ruler. The canvas offers snapping and guidelines, plus a full perspective view. The more I play with Line, the more drafter's tricks I pick up.
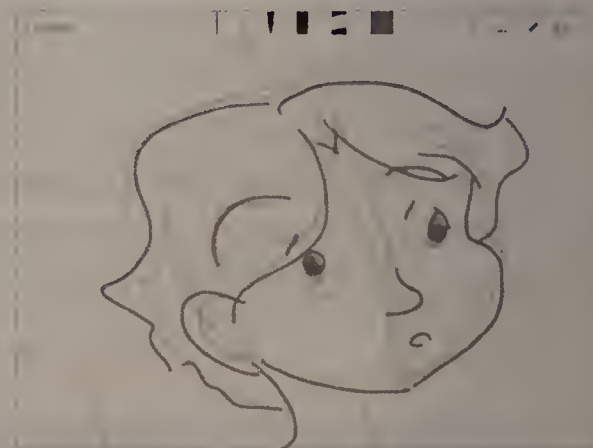
Both apps are excellent choices for artists, doodlers, stampers, and other creative folk.—SERENITY CALDWELL

Optrix PhotoProX Shields Your iPhone Underwater

**Optrix
PhotoProX**

🔵🔵½

PRICE:
$150

COMPANY:
Optrix
optrix.com

A shock-proof and waterproof (down to 33 feet) housing for your iPhone 5 or 5s, Optrix's PhotoProX allows you to capture photos or video without worrying about damage from moisture, sand, or slippery fingers.

It consists of a weather-sealed housing, a snug-fitting shell, and a set of four lenses that screw onto an opening for the iPhone's camera: a fish-eye lens, a 2X telephoto lens, a macro lens, and a "0-degree" lens that doesn't change the optical view.

The shell hugs the back and sides of the phone, and is easy to remove. You secure the phone in the housing via an easy-to-open top hatch that locks solidly. Another locking door exposes the headphone jack and Lightning port, and a plastic O-ring seals the lens mount.

You access the iPhone's screen through a plastic membrane that requires pressure to ensure contact with the touchscreen. I had trouble pressing the iPhone's external buttons, so instead I usually pressed the shutter button in the Camera app.

Dunking the contraption was nerve-racking at first, but I needn't have worried:

Taking video and photos underwater worked well, and the iPhone even picked up sound well enough.

Although the lenses are well built, the optics are disappointing. The telephoto creates distortion and softness at the edges, while the fish-eye lens picks up the outer edge of its housing. I used the 0-degree lens most of the time.

My iPhone 5s remained intact after I exposed it to sand, immersed it in pools and the ocean, and dropped it. The PhotoProX itself, alas, did not survive two contacts

with the sidewalk. On the second drop, from about 3 feet, the plastic fractured near the top latch. Maybe it hit at just the right angle.

The PhotoProX guards your iPhone when you're taking photos in harsh conditions. But I wish the lenses performed better.—JEFF CARLSON

Create, Mark Up, and Annotate With Skitch

**Skitch for
iOS**

🔵🔵🔵½

PRICE:
Free

COMPANY:
Evernote
evernote.com/
skitch/

Skitch has long been a beloved Mac program. It gained many followers in its beta days and won over even more after Evernote acquired it in 2011. Skitch's free iOS counterpart is just as lovely, offering mobile users a quick way to draw on items before sharing them. It's an app I've found myself using more and more lately, especially when testing apps or Web projects.

When you open Skitch, you can choose to draw on a blank page, take a photo (with a prebuilt annotation arrow or

box) or pull one from your library, annotate a PDF file or webpage, or add information to a map page.

The app's rotational carousel makes all of these options simple to use; once you've chosen something to mark up, you have assorted tools at your disposal. My favorite when working with app screenshots is the insta-blur function: Just draw a rectangle around an area of the screen to mask its contents. You can also add commentary icons—checkmarks, Xs, exclamation points, question marks, and smiley faces that you can tag atop your document.

Other tools include shape-drawing features (rectangle,

rounded rectangle, circle, and line), text entry, and standard arrow markup. After placing these elements initially, you

can resize and color any of them, so if your arrow isn't quite at the angle you prefer, you can adjust it.

You can share your Skitch creations through almost any service, thanks to the app's support for Open In (and, come iOS 8, extensions), though it already has a bunch of built-in defaults, including Evernote support. You can also save your marked-up items directly to your Camera Roll for future use.

All in all, Skitch is an excellent addition to your iOS-utility toolbox, whether you mark up lots of documents or just want to doodle a little. It's absolutely worth grabbing.—SERENITY CALDWELL

PHOTOGRAPHY APP

Control Your Camera's Shutter in Triggertrap Mobile

Triggertrap Mobile

PRICE:
Free ($40 cable)

COMPANY:
Triggertrap
triggertrap.com

Creative opportunities open up when you control a camera's shutter speed. With the Triggertrap Mobile app, you can control your camera's shutter via an iPhone, iPad, or iPod touch, if your camera is one of the hundreds the free app supports. It requires a cable, available as a $40 purchase.

Its time-lapse and sensor modes are especially interesting. The Bramping mode, for instance, sets the number of shots and the time interval between them, and lets you choose shutter durations for the beginning and end of the shoot. The Distance-Lapse mode uses your iOS device's geo-location sensor to snap a photo at specific distances—for example, every 500 meters.

The sensor modes use your iOS device's sensors to fire your camera in reaction to sound, vibration, motion, or facial recognition. I set up my DSLR and an iPhone 5s with Triggertrap to capture birds at a feeder. The Motion Sensor mode uses the iPhone camera, so I had to keep it pointed at the same spot. As the mode has no sensitivity setting, I got some photos of the feeder swaying in the wind, but the mode compensates with a setting that lets you choose how many objects may move in the frame before the shutter triggers.
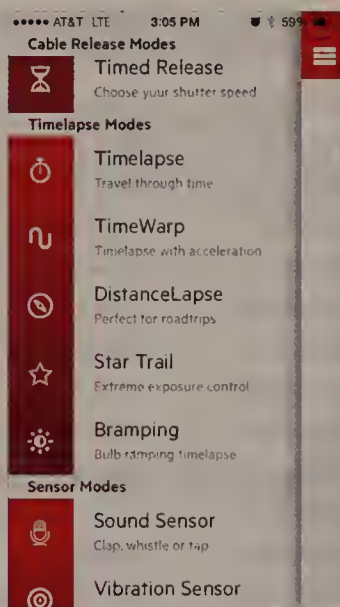
If you have two iOS devices, the app's remote Wi-Fi trigger modes let you use one device to control the app on the other device (which you've hooked up to the camera). Curiously, the sensor modes use the "master" device in your hand, not the "slave" attached to the camera, making those features far less useful remotely. This setup also doesn't work with the camera in Bulb mode.

Even given its limitations, Triggertrap Mobile dramatically expands your photography options.—JEFF CARLSON

TwoDots: A Dangerously Addictive Brainteaser

TwoDots

♦♦♦♦

PRICE:
Free

COMPANY:
Betaworks One
weplaydots.com

The object of *TwoDots* (the follow-up to *Dots*, one of the most successful puzzle games of last year) is fairly simple: Make as many vertical and horizontal lines from the same colored dots as possible.

Unlike the original game, the adventure-themed *TwoDots* features a pair of "dot" characters, Amelia and Jacques. These two travel with you to different worlds as you advance through the levels. The characters are fun and may draw in younger players, but they seem unnecessary, detracting from the simplicity of the game.

TwoDots restricts you to a certain number of moves per level. Presenting differently shaped grids, each level demands increasing accuracy. If you fail to complete a level in the assigned number of moves, or if you restart the level, you lose a life. You have five lives; lose them all, and you can wait 20 minutes or pay $1 for a refill.

Some of the grids are so challenging that you might drain your lives quite quickly; adding extra lives or moves via in-app purchases could prove expensive for addicted players. Perhaps more distressing is the fact that the truly difficult levels depend more heavily on luck than on solving skill, with the dots' initial arrangement significantly influencing the outcome.
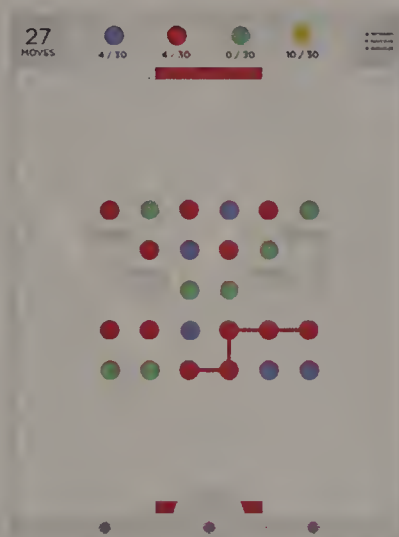
With more than 100 levels, *TwoDots* offers engaging gameplay. The reminders for in-app purchases can annoy, especially since they come at the most tempting moments, but the gradual regeneration of lives means that patient players can enjoy the game without ponying up any cash.

Although connecting dots may not be the most thrilling concept, *TwoDots*' ramping up of difficulty on each level adds an addictive quality that the original *Dots* just can't match.—AMY MOORE

OS X
YOSEM
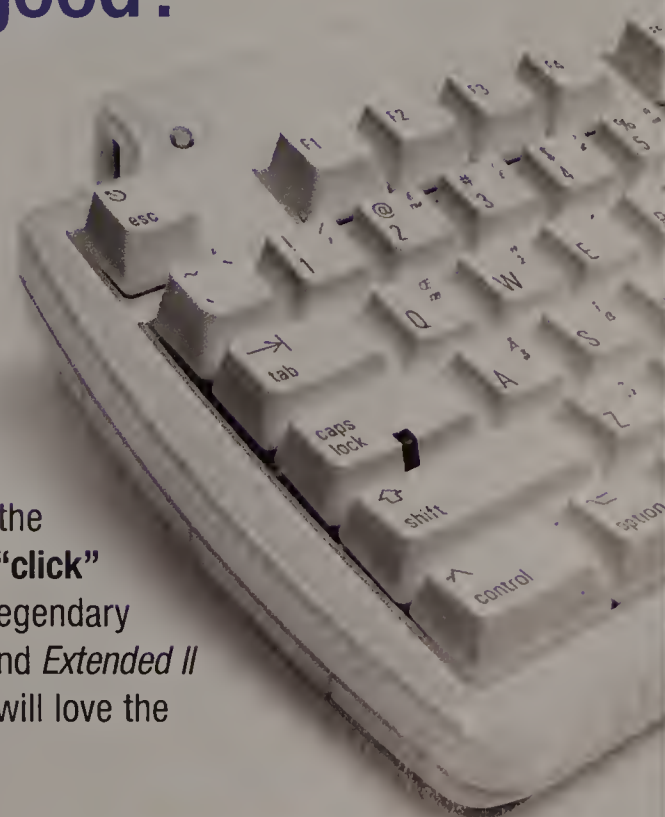
HERE'S WHAT THE MAC'S

By Jason Snell

For a few years there, it felt like major changes in OS X's look and behavior were imminent. The conventional wisdom was that Apple had placed OS X on a collision course with iOS, and inevitably the two would come together to form, if not a single operating system, then two variations on a single theme.

In the past year, though, it's become clear that Apple no longer believes in that approach, if it ever truly did. After spending more than a month running a prerelease version of OS X Yosemite (on a Retina MacBook Pro provided to me by Apple), I can see that Apple has a clear future in mind for the Mac—one where OS X and iOS work in tandem, but don't ape one another.
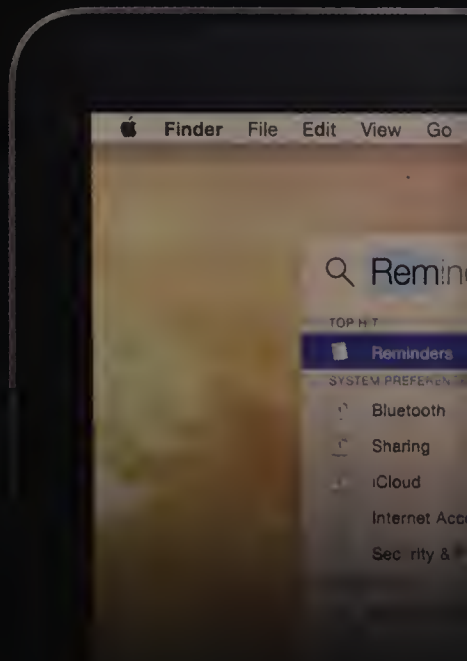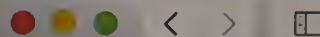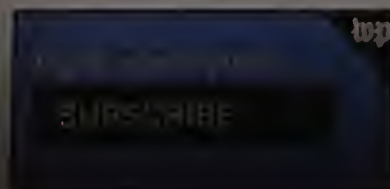
EXT OS WILL LOOK LIKE

MITE

Reminders

Maps   File   Edit   View   Window   Help

Directions

Pine St   Jamba Juice

Bush St

Hardie Pl   Sutter St   Market St

CVS Pharmacy

mehr Pl

Post St

Montgomery
MUNI Station

Annie St   New Montgom

Mission St

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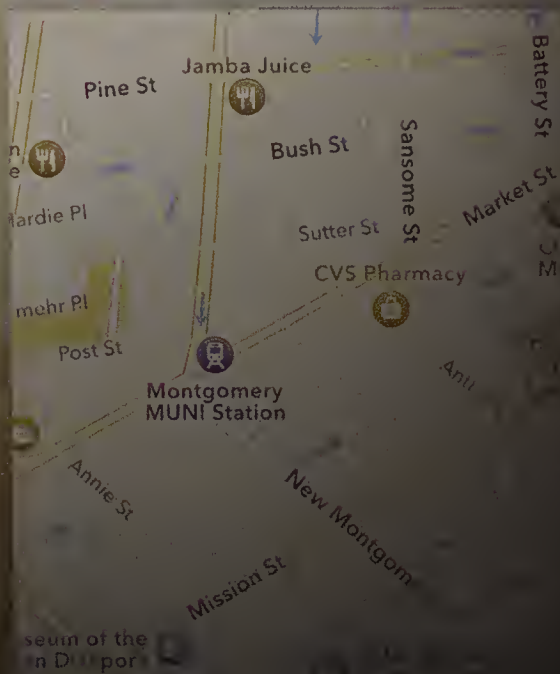
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Business   Tech   Lifestyle   Entertainment   Jobs   More

ington Post

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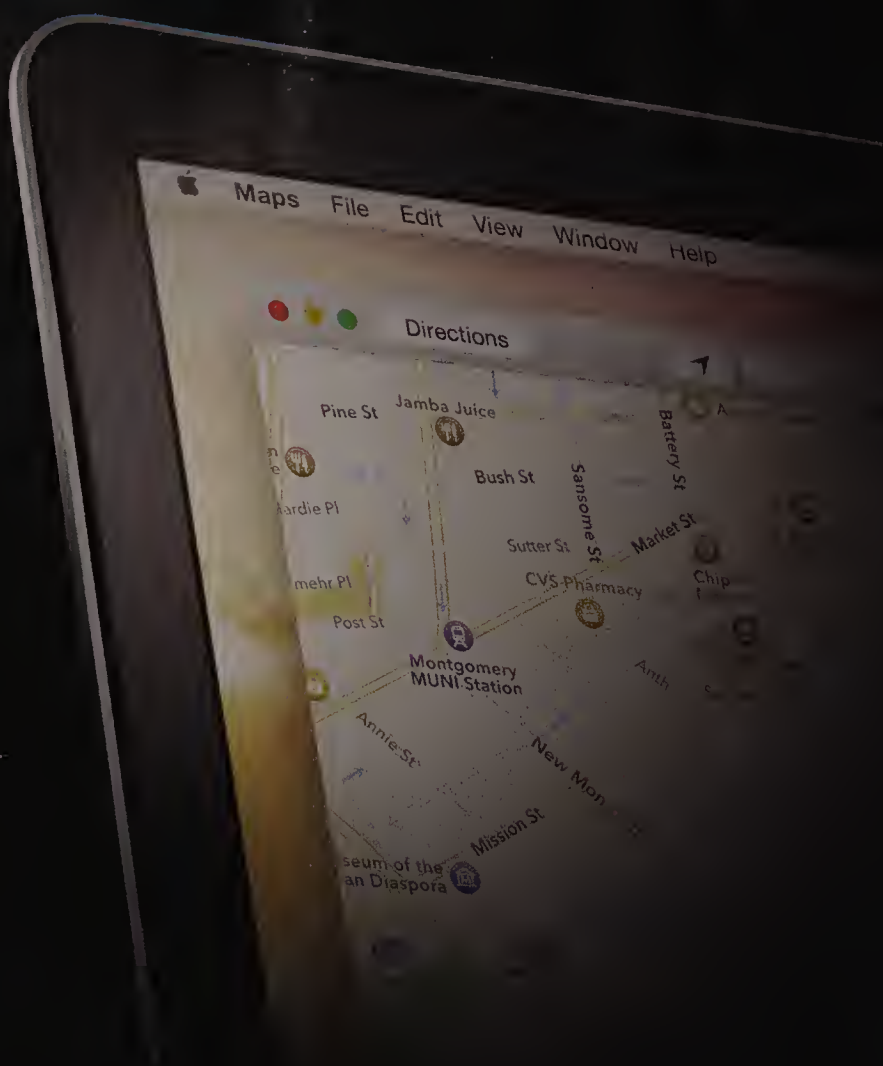
DESIGNED FOR RETINA

During 2012's Worldwide Developers Conference, Apple unveiled the 15-inch MacBook Pro with Retina display, and a few months later the 13-inch models arrived. But two years into the Retina Mac era, there are still no Retina iMacs or MacBook Airs, nor are there affordable external Retina displays.

For a while now, I've thought that 2014 would be the year that the Retina display spreads across the Mac product line. After spending time with Yosemite on both Retina and non-Retina systems, I'm more confident than ever in that prediction. Yosemite's new design feels like it was built for Retina displays: Thin Helvetica Neue replaces the long-serving but chunky Lucida Grande as the system typeface. Transparency is more pervasive than ever— inside app windows, underneath toolbars, and even on the log-in screen itself.

MORE REFINED

There's no doubt that within a few years, most Mac users will be using high-resolution displays. That's the direction Apple is heading in, and while this trend will take longer to happen on the Mac than it did on smartphones and tablets, it *will* happen. And considering that three-quarters of the Macs that Apple sells are laptops, Apple is wise to consider, say, the 13-inch Retina MacBook Pro as the reference Mac for design purposes.

OS X Yosemite is gorgeous on such a display. So here's hoping Apple rolls out high-resolution iMacs, MacBook Airs, and (dare I hope?) an external display later this year; if it does, Yosemite's refined look will be able to shine up and down the product line.

Beyond the system font, the most obvious visual change in Yosemite is that the gray light-to-dark gradient atop most windows is now much more subtle, so much so that I didn't even register that I was looking at a gradient. In addition, the red, yellow, and green "stoplight" buttons on the upper-left corner of windows—the ones you use to close, minimize, or zoom that window—have been stripped of the shading effects that made them look like pieces of candy. Now they're just flat circles.

When you move your cursor over them, you'll find the same *X* in the red circle and minus sign (–) in the yellow circle. The green circle no longer displays a plus sign (+), however; instead, it shows the two-headed arrow that indicates full-screen mode. If you want to zoom a window's size in and out, old-school style, you'll now need to hold down the <Option> key before clicking the green button, or just double-click on the window's title bar.

Darth Vader would be a fan of Yosemite, because it adds a new Theme selection in the General pane of System Preference, allowing you to switch your Mac from Light (the OS X we all know) to Dark. With the Dark theme enabled, the menu bar is dark, with light text, and the
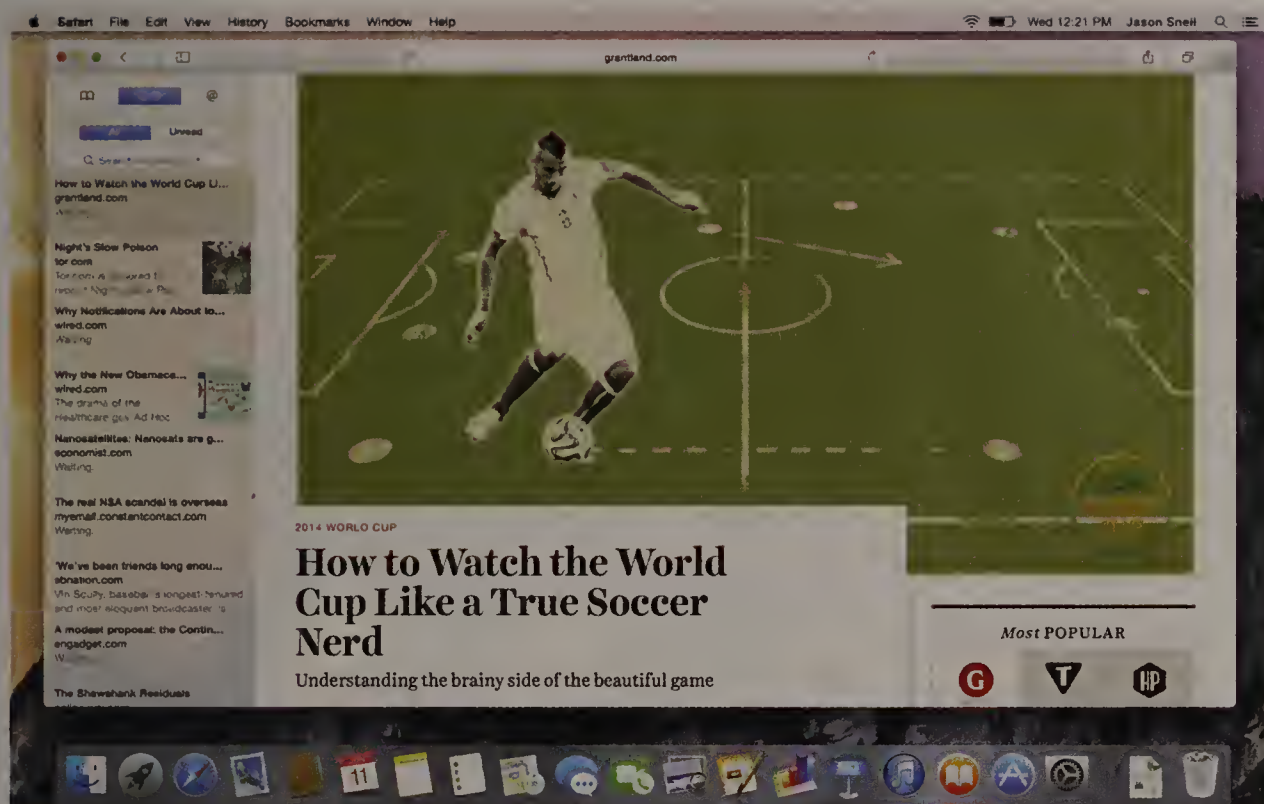
THE NEW LOOK You'll notice interface design changes throughout Yosemite, including a greater use of translucency in windows and other elements, a two-dimensional rendering of the Dock, a slimmer menu bar, and, in Safari, no more title in the 'title bar.'

Dock's background darkens substantially as well. Menus are now darkly translucent, and drawn with white text. As for the rest of the system, nothing else seems to change when the Dark theme is enabled. It would make sense for predominantly dark-on-light apps, such as Notifications, to switch to a dark-on-light color scheme in this situation, but—at least in the prerelease version of Yosemite I used—that wasn't the case.

DESIGNED FOR WIDE SCREENS

Just about every Mac display is a lot wider than it is tall. So in the Mac interface, height is at a premium, while there's width to spare. Yosemite's design fits more stuff on your screen by cutting the height of many window title bars in half.

This change has a ripple effect on other interface elements. Take, for example, those stoplight buttons that previously sat on the same level as the centered name of the window and the double-headed arrow icon for full-screen mode. Now those buttons share space at the top of windows with other interface elements.

In Yosemite's Safari, the three buttons are on the same level as toolbar elements such as the next-page/previous-page button, the address/search bar, and the like. In fact, in Safari the name of the window (and, therefore, the title of the page you're

> ## YOSEMITE TRIES TO FIT MORE ON YOUR SCREEN BY CUTTING THE HEIGHT OF TITLE BARS IN HALF.
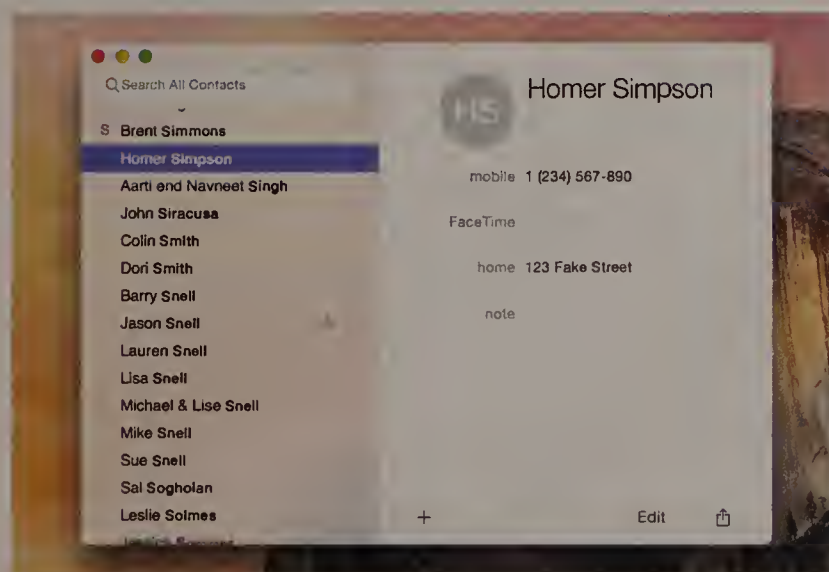
MINIMALIST WINDOWS In many OS X Yosemite windows, such as this one in the Contacts app, the menu bar has vanished, and the stoplight buttons move around.

viewing) is completely gone.

In Contacts, meanwhile, the entire top window bar has disappeared. The stoplight buttons remain at the top-left corner of the window, but that's now at the top of the leftmost visible pane of the application. The buttons hover over the translucent Groups column until you choose *View → Hide Groups*, at which point they hop over to the top of the Contacts column (which turns from white to translucent in the process). You can still drag a thin band, located across the top of the Contacts window, but it's not what you'd call a traditional Mac title bar.

This design isn't consistent across all of Apple's apps, either. (Since this is an early developer-preview edition, things could certainly change before Yosemite reaches users this fall.) The stoplight buttons share space with the toolbar in the Calendar, Maps, Messages, and Reminders apps. (Philosophical question: If a bar contains no title, can it still be called a title bar?) Yet Mail, TextEdit, Preview, and iWork all look the same as they ever did.

I don't really mind the trend—I use an 11-inch MacBook Air every day, so I know about cramped working environments. By merging the toolbar and title bar, this approach saves some precious vertical space. Unfortunately, an overly cluttered title bar might be hard to reposition on screen if you can't find anywhere to click that isn't covered by a button. And while those old title bars had an awful lot of empty space, sometimes such space can be good.

SUBTLER CHANGES

Energy
Saver

Energy
Saver

BULB SWITCH Apple has updated the Energy Saver icon from a compact fluorescent bulb to a bright new LED model.

Yosemite's new look can lead to situations where windows feel *more* cluttered.

I'm also a little nonplussed by the disappearance of titles from the top of many windows. In apps that never really have more than one important window (Calendar and Maps come to mind), the title is unnecessary; labeling

As with most OS X releases, Yosemite has its share of subtle design changes. The most notable is probably the system's increased use of translucency, in which some interface elements are semi-opaque, allowing a blurred-out version of whatever is behind the window to show through. It's a style iOS 7 uses in abundance, and it's now sprinkled here and there in Yosemite. The Messages sidebar, for instance, is translucent. The effect is subtle, so it doesn't harm readability, but it doesn't seem to serve any useful purpose.

Up in the (still translucent) menu bar, the bars on the Wi-Fi icon are thinner, and a

> YOSEMITE'S DOCK IS MERELY A 2D BACKGROUND WITH A HINT OF TRANSLUCENCY.

my Calendar window with the word *Calendar* seems pointless. But in many other contexts, the title of the window imparts important information, and there's a danger that we'll lose some of that information if Apple takes its minimalist approach too far. It's something worth keeping an eye on, especially given the radical changes Yosemite has in store for Safari. (Read more about Safari on page 48.)

simplified battery icon on laptops feels more like the one from iOS. The Spotlight menu-bar item remains anchored next to the similarly immovable Notification Center icon, despite the fact that the Spotlight window itself now floats in the center of the screen. I sense a disconnect here.

Beyond the occasional window pane, translucency effects pop up in a few other places as well. When Exposé
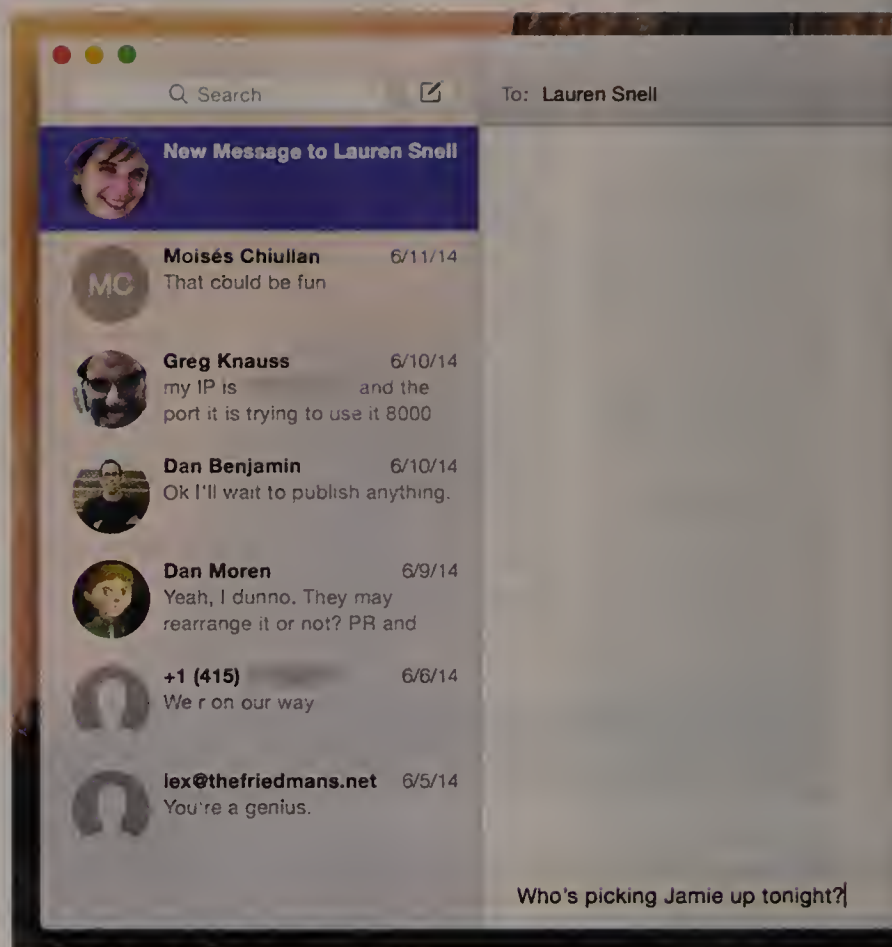
is triggered, the background now fuzzes out, and there's a similar effect on the log-in screen, which shows a blurred picture of Yosemite National Park's Half Dome.

A number of interface elements have been flattened in the same style as the stoplight buttons. Most notably, the pulsating blue glass-textured button in dialog boxes has lost its texture, it's darker (with the text in white), and it doesn't pulsate anymore.

In addition, the system's trash can is now a white translucent plastic-looking job rather than the metallic wire basket previously favored.

And the Dock, which in recent versions of the OS had become a 3D shelf at the bottom of your screen upon which your icons sat, has

SIMPLER AND FLATTER Default buttons now lack a texture and don't pulsate.

reverted to something simpler. Like the Dock that you can

LIGHTER TOUCH The sidebar in Messages is translucent, showing the items behind it.

still find in Mavericks if you set it to display on the left or right side of your screen, Yosemite's Dock is merely a 2D background with a hint of translucency. It's a great improvement. The subtle glow beneath running applications in the Dock is now a more noticeable black dot.

There's also a fresh new face in OS X Yosemite—literally. Apple has updated the "Mac face" logo that has represented various portions of the Mac (originally the classic Mac OS, most recently the Finder) for the last 16 years. Farewell, old face, you served us well.

Finally, this breaking news from the System Preferences app: The compact fluorescent light bulb that has represented the Energy Saver preference pane since 2008 has been exchanged for an LED light bulb.

File Format: Rich Text Document

Delete   Cancel   Save

NOTIFICATION CENTER

Notification Center was introduced in Mountain Lion and expanded on in Mavericks. But with OS X Yosemite, Notification Center is exponentially more useful than it was before—so much so that it probably deserves a new name.

A SUPPLY OF WIDGETS

But I'm getting ahead of myself. Let's start with the most fundamental of changes: With Yosemite, Notification Center no longer slides a Mac's entire interface off to the left in order to pop out from the right side of the screen. Now, Dock-like, it slides in on top of the right side of your screen while you're using it. The old

approach was certainly dramatic, but I think this new one is a better metaphor.

Once Notification Center slides in, you'll notice a major change right there at the very top: As in the iOS version, there are now two tabs, one called Notifications (that's the one you're already familiar with), and one called Today. The Today tab is where all the exciting new additions to Notification Center live.

Today takes its name from a similar tab that appears in iOS 7's Notification Center, because like that tab it gives users a quick view of what's going on today, such as how many calendar items they've

got and when their next meeting is. The Today view in Yosemite incorporates that functionality, but it also offers much more.

At the bottom of the Today view is an Edit button; when you click it, Notification Center slides out even further, revealing a second column on the right that's full of items you can add to the Today view. You can also use this editing view to remove items that are currently in the Today view or to reorder them. These items are Notification Center widgets, which Apple is adding to both Yosemite and iOS 8.

Apple provided nine widgets with the version of Yosemite I was using: Today summarizes what's happening today in your schedule, as it does on iOS 7, and the Tomorrow widget does likewise for the next day. Weather displays current temperatures and forecasts. Reminders shows you timely items from the Reminders app. Calculator lets you do addition and multiplication and other basic math things. Social lets you post to Facebook or Twitter, or send texts via Messages. World Clock shows the time in various cities. Calendar displays today's calendar items. And Stocks shows time-delayed stock prices.

Some of these widgets are configurable. When you're not in Edit mode and you move your cursor over some

> YOU CAN ADD WIDGETS TO THE TODAY VIEW BY DOWNLOADING MORE FROM THE MAC APP STORE.

widgets' title bars, a lower-case letter *i* in a circle appears. Click it, and you can modify that widget—adding or removing cities from the Weather or World Clock widget, for example.

Though you'll just be glancing at many widgets, you can interact with most of them, too. Clicking on a city in the Weather widget expands it to show an hour-by-hour forecast, which is very much the behavior we're used to seeing in Apple's Weather app on iOS. If you click the Calculator widget, you can click its buttons or use the keyboard to do your math.

WIDGET CRITIC

Notification Center's base widget collection is very much in line with what we've seen on iOS and in OS X's Dashboard feature. But the great news is that you can add widgets to the Today view by downloading them from the Mac App Store. After you click the Edit button in Notification Center, a new App Store button appears.

Stand-alone apps can supply their own widgets automatically. (If you bought, say, TLA Systems' PCalc on the Mac App Store, its hypothetical widget would appear automatically in the Items list.) In addition, there will probably also be a widgets-only corner of the Mac App Store.

I'm excited to see third-party widgets. Though Apple's widgets are fine, they're a bit boring. The Weather widget doesn't show forecast highs or lows. The Calculator widget supports only the four basic

operators and percentage. World Clock doesn't offer a digital time view, nor is the list of clocks horizontally scrollable (so as you add clocks, the widget gets taller and taller). Reminders shows only items with approaching due dates, ignoring undated items.

Maybe Apple will improve on its widgets by the time it releases Yosemite. Or maybe the widgets will remain light on functionality—looking at the bright side, that offers a nice opportunity for developers to supplant them with better versions in the Today view.

SEE YOU LATER, DASHBOARD

When Apple announced the changes to Notification Center in Yosemite, everybody seemed to have the same thought: That pretty much wraps it up for Dashboard, the interface layer for simple widgets that Apple introduced nine years ago as a part of OS X Tiger. Perhaps surprisingly, Dashboard still exists. You can enable or disable it via the Mission Control pane in System Preferences.

But let's not kid ourselves: Dashboard is on its last legs. I'd put down good money that Apple will remove it

in next year's OS X update. The company introduced Dashboard widgets (written in HTML and JavaScript) in an era when using Web-based technologies to write lightweight applets seemed like a great idea.

But now we're in the App

Store era, and using the same technologies that power iOS and Mac apps seems like a far better choice—and that's what you'll find when you're running Yosemite's Notification Center widgets. If they seem to you a little like fragments of iOS apps, you're not far off. Since iOS 8 also supports Notification Center widgets, I suspect we'll be seeing a lot of the same widgets on both platforms. Apple's thriving community of app developers should provide us with a vibrant selection of widgets, something Dashboard never really achieved—or at least hasn't seen since the halcyon days of 2006.

All told, Notification Center's Today view seems like a great replacement for Dashboard, and a major benefit to OS X users. My only real complaint is the name on the package. Notification Center is no longer just for notifications, and the Today view is the landing place for widgets with information that goes far beyond what's happening today. Sure, in iOS 7 those features' names made sense—but in Yosemite (and iOS 8), they simply don't fit anymore. Notification Center is a major new piece of functionality— it deserves a name that fits it.

Hmmm...how about "Dashboard"?

TODAY VIEW Notification Center's new Today view will seem familiar to iOS 7 users, but Yosemite's version expands its functionality by letting you add more widgets and configure them to your liking.

SPOTLIGHT

Like Dashboard, OS X's Spotlight feature has been with us since OS X Tiger. That entire time, it has been a systemwide search feature parked at the top of the screen. Yosemite's Spotlight is very different, however, with a new look, a new location, and new data sources. This is not the Spotlight we've come to know.

In Yosemite, Spotlight appears in a new position. While the Spotlight menu-bar item remains anchored near the upper-right corner of the screen, next to the Notification Center icon, the Spotlight window itself is no longer stuck up there, too.

Now, when you press ⌘-<Space>, Yosemite's Spotlight bar appears in the upper middle area of the screen, and text you type is larger than it was in previous versions of the OS.

DEEPER SEARCHES

In Yosemite, Spotlight's search results come in two flavors: immediate and detailed. As you begin to type, the text immediately autofills with what Spotlight thinks is the most likely match for whatever you're seeking. This behavior makes Spotlight ideal for launching apps. As you begin typing the word **calendar**, for example, you'll see the word instantly completed for you in light-gray characters. Press <Return>, and the Calendar app will launch immediately.

However, give Spotlight a couple of seconds instead of pressing <Return>, and the thin Spotlight window will expand into a larger window full of detailed results from numerous data sources. In Mavericks, Spotlight searches your files and the dictionary, and offers links to launch Web or Wikipedia searches. In Yosemite, Spotlight expands that roster of sources to include news headlines, maps, Bing Web search, the App Store, the iTunes Store, top sites, and movie showtimes. And these aren't simply links for opening those searches in Safari: The actual search results from those sources appear right in the Spotlight window.

The new Spotlight results window is divided into two panes, below the quick text-entry area. On the left is a list of results, sorted by source. On the right is a preview pane, where you can click or use the arrow keys to select a result. In many cases the preview is all the information you'll need; for dictionary definitions and even some Wikipedia article summaries, it does the job. But if you want to see more, just double-click or press <Return> to open the selected item in an appropriate spot.

Even with my early preview version of Yosemite, Spotlight worked remarkably well. Not only was it fast, but the results seemed rich. When I typed **potato**, my results included the Wikipedia article on the potato, a dictionary definition, and a link to the app Action-Potato in the App Store. When I typed the name of my son's school, Maps provided its address and a thumbnail view of its location. Typing the

NEW LOCATION The Spotlight window in Yosemite has moved from the top-right corner to the upper middle area of your screen.

name of a recent movie brought up its poster, Rotten Tomatoes rating, run time, trailers, plot summary, and cast list, as well as (of course) a list of movie times.

Other sources were a bit spottier. The news results tended to display just one article, and a fairly random one at that. iTunes results seemed to find the titles of hit songs, but not artists or albums. When I typed **Lady Gaga**, I wasn't directed to an iTunes artist page, but rather to the "Poker Face" music video.

Spotlight also now supports unit conversion, so I can impress my Canadian friends by typing **83F** into the search window and telling them that yesterday's high temperature was 28 degrees Centigrade.

SHERLOCKING ALFRED?

As soon as the new Spotlight was announced, I began to hear people speculating about whether, because it's such an expansive upgrade, it will render third-party launchers such as Alfred, LaunchBar, and others—irrelevant (hence the term *Sherlocking*; go.macworld. com/sherlocking). But, as with most core OS features that Apple announces, Spotlight's features are meant to appeal to *all* users, not just power users. If the only things you're using

Alfred for are launching apps and running quick searches, then I suppose you might not need it anymore.

But all of those launchers provide features that Spotlight doesn't support, even in Yosemite. If I type **yet** in LaunchBar, it will find a document titled *Yellow Elephant Test*. (Spotlight will search only for the exact

string *yet*.) If I then press <Tab> and type **bb**, it will offer to open that document in BBEdit. These third-party apps also offer quick access to the history of your Clipboard, they support customizable hotkeys to open files, and they're extensible and customizable—all things that Spotlight's fancy new search really doesn't offer.

That said, the new Spotlight is very cool. In fact, it's so cool that I might actually use it regularly, something I tend not to do today, at least not from the menu bar. Spotlight looks great, and the responsive and rich results, even at this early date, sug-gest that it will be one of Yosemite's most popular features in the OS update.

ONE-STOP RESULTS Spotlight displays search results right on the page, instead of simply providing links to the information you seek.

A WIDER NET Spotlight searches now draw from a more extensive array of data sources, including databases of movie information.
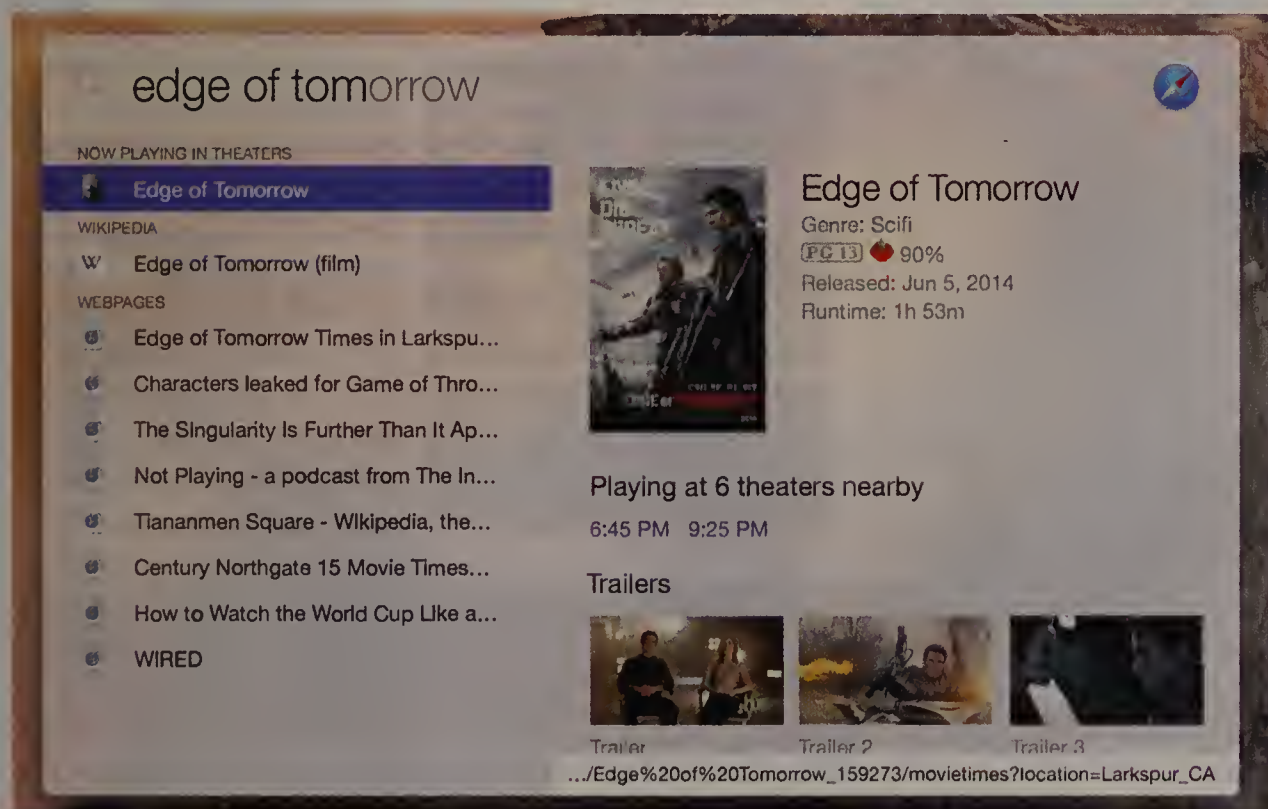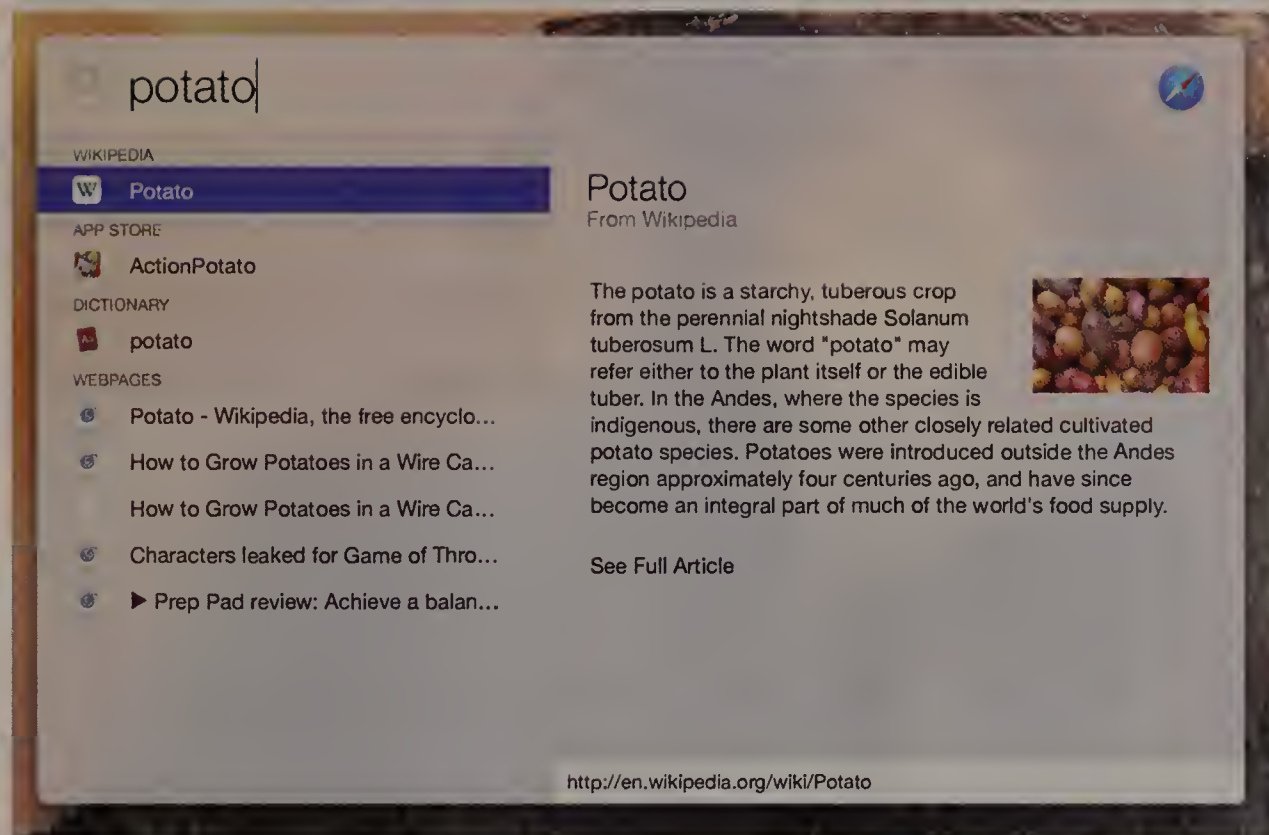
SAFARI

If there's a single app that defines the OS X experience, it's probably Safari. Not everyone uses it (many of my friends and family members prefer Chrome). But as the default browser, it's the window on the Web for most Mac users.

By default, Safari is sparsely decorated in Yosemite. The title bar showing the name of webpages is gone, and the stoplight-style window buttons have merged down into the toolbar, as they have in some other apps. All other toolbars are turned off by default, and the address/search bar no longer displays a full URL—just the name of the host that's serving the page you're viewing. (If you want to see the name of the page you're on, you need to have the Tab bar open—tabs are the only place where page names are displayed.)

The result is a minimalist look that feels like it was plucked from Safari on iOS 7: There's one bar and very

little text, and everything else is the webpage itself. On a phone, minimizing the stuff that surrounds the webpage is desperately necessary. On a tablet, it's a good idea. On a 15-inch Retina MacBook Pro or a 27-inch iMac, it feels a little pointless.

TOO MINIMALIST?

Let me put my cards on the table here: I dislike this new approach. On my Mavericks Mac, I have Safari set to display the status bar and the

Favorites bar. The status bar shows me where a hyperlink will take me, which I like. The Favorites bar gives me quick access to my most important sites as well as to my bookmarklets (little JavaScript-embedded macros that do things like add podcasts to Huffduffer or articles to Instapaper). Though I occasionally use browser tabs, I don't have the Tab bar turned on by default—it appears only when I have more than one tab open in a window.

The way Safari for Yosemite does things is essentially the opposite of the way I use my Web browser. The good news is, you can change most of these choices via the View menu, where you can restore the Favorites bar (which, strangely, now centers the bookmarks!) and the status bar. Unfortunately, the menu bar no longer displays the page name, and you can't opt to see the full webpage URL.

My general crankiness aside, this design approach also poses a major usability problem. By removing the title-bar area at the top of the browser window, Apple makes Safari windows immediately harder to drag around the screen. The narrow gray space just to the left and right of the address/search bar is the only place you can reliably use to drag.

The centering of bookmarks in the Favorites bar is also a mistake, because now when you resize a window or add or remove an item, every other item in the bar slides around. You can't rely on muscle memory to tell you exactly where in the browser window a favorite bookmark is. In Yosemite, the Favorites bar is all shifting sands.

MORE VIEWS
But Apple hasn't just stripped away or hidden features in Safari for Yosemite: It has added several features, some of which it has taken from Safari for iOS. The demotion of the Bookmarks bar seems to have happened because there's a new Favorites view that looks very much like what you see when you tap in the address/search bar in Safari for iOS: The browser

> THIS SAFARI HAS A MINIMALIST LOOK THAT FEELS LIKE IT WAS PLUCKED FROM SAFARI ON iOS 7.

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window fills with the contents of your Favorites bookmarks, the same collection that populates the Bookmarks bar. If you like the Favorites view, you can set it as the default view when you open a new page or tab.

Unfortunately, this Favorites view feels half-baked, at least in the prerelease version I've been using. A large icon represents each of the bookmarks, but they're just generic Safari compass icons (in the new flat icon style that has also replaced Safari's venerable metallic compass icon). All of my bookmarklets display in this view, which is pointless, since they're useful only when they're acting on other pages, and the subfolders full
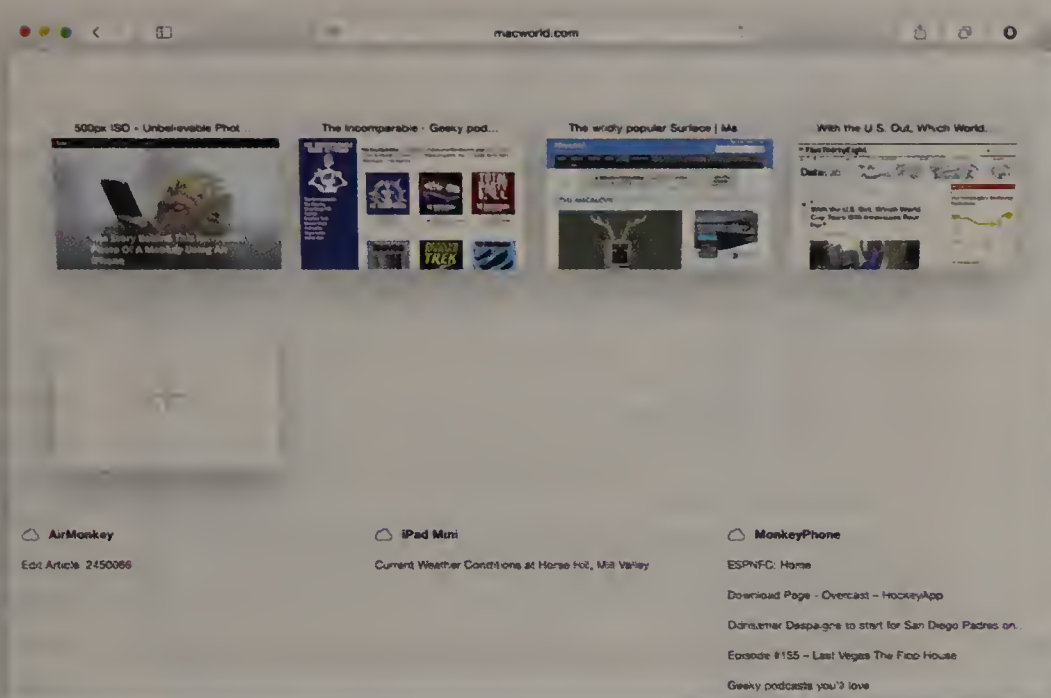
TABS ACROSS DEVICES Safari's new Tab view displays the open tabs in a window, and, via an iCloud sync, it lists any tabs you have open on other devices.

of bookmarks that live in my Favorites list and generate drop-down menus in the Favorites Bar don't appear at all. This is a view that could be useful for some users in the way that the Top Sites view (which is available from the same page as Favorites,

via a toggle button) can be. But I can't envision ever using it myself.

NEW TAB VIEW
Another addition is Tab view, which is actually a redesign of the existing feature that would let you zoom out (by

pinching on a trackpad) to see the contents of all your open tabs in one place. In Mavericks, that view was a series of slightly zoomed-out pages that you could swipe through, one by one. Well, that's gone. The new Tab view, accessible via pinching on the trackpad or clicking on the new tab-view button in the toolbar, is a grid of thumbnails of the tabs currently open in that window, supplemented with a list of tabs open on your other devices, synced via iCloud. (This approach replaces the old iCloud Tabs button.)

I never considered the old quick-tab view anything but a nuisance—a mode I got into when I zoomed too far out of a page unintentionally. And I'm not convinced that I'll be using the new Tab view a lot, though the addition of iCloud Tabs will give some people a reason to pay it a visit. The ability to scroll through a long list of tabs in the Tab bar, added in Yosemite, seems like it will appeal to more people than this zoomed-out view.

MORE WAYS TO SEARCH
One feature addition that I really do like is the enhancement of the autocomplete options when you're typing in the address/search bar. And as you type into the bar, Safari is not simply querying your search engine and bookmarks anymore—it's also searching Wikipedia, Maps,
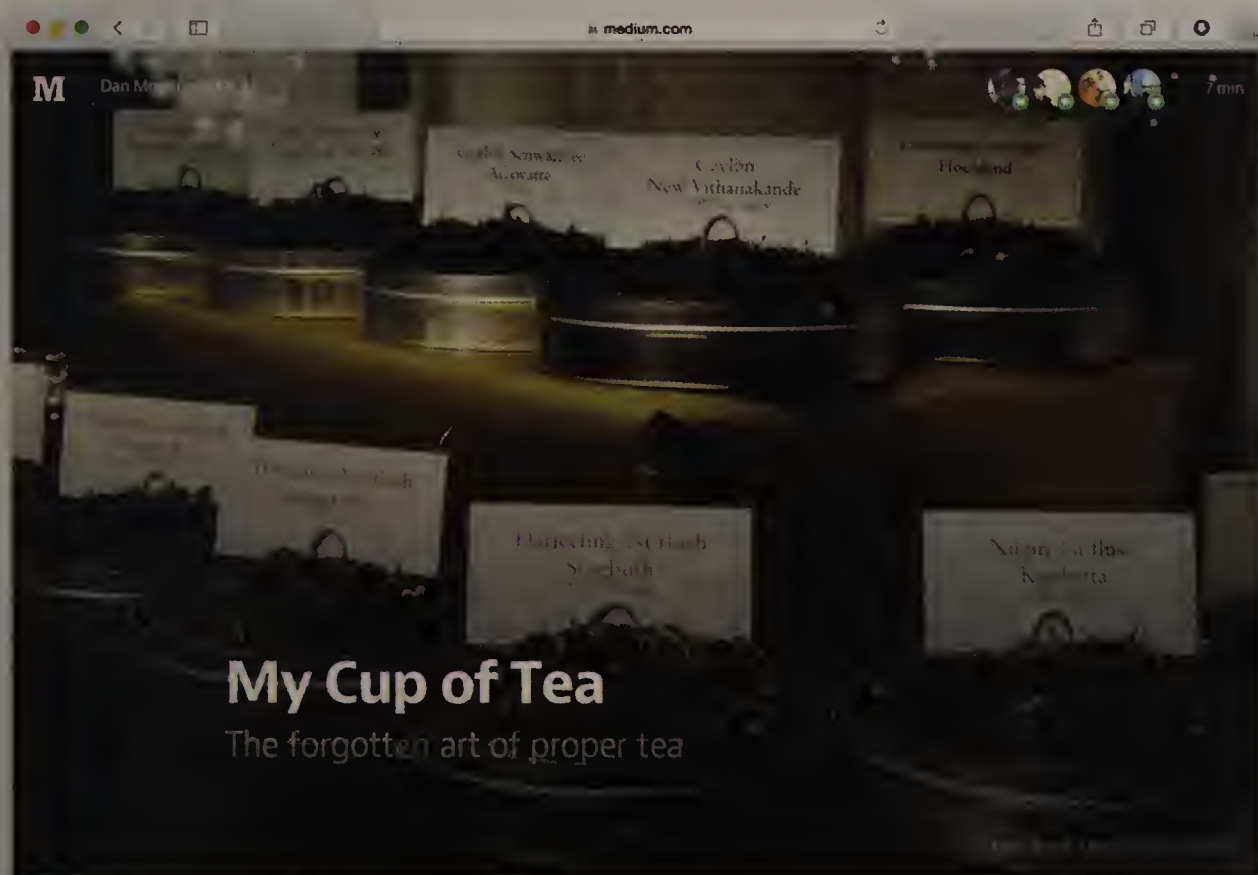
ULTRA-STREAMLINED In the default view, Yosemite's Safari displays no title bar, status bar, or Favorites bar. Instead, you'll see just the toolbar, with the rest of the window devoted to the content of the webpage you want to view.

iTunes, and news—just like in Spotlight. It's a small change that makes using the browser as a quick reference tool much easier, since you can (for example) jump to the Wikipedia page for a topic you're interested in directly from the bar.

A Wikipedia page is the destination of so many of my searches that it makes sense for Apple to eliminate the intermediate step and allow me to jump straight there. In my testing I could get only Wikipedia search to work, but adding other Spotlight data sources to the party sounds like a good idea, too.

There's also something called Quick Website Search. This appears to be a way for you to jump straight into a given website's own search engine from Safari. For example, if I type `netflix star trek`, Safari gives me an option to search Netflix for *star trek*, and if I select that item I am immediately taken to Netflix's own search results for my term. That's a nifty shortcut that, again, eliminates an intermediate page and takes me right to my results.
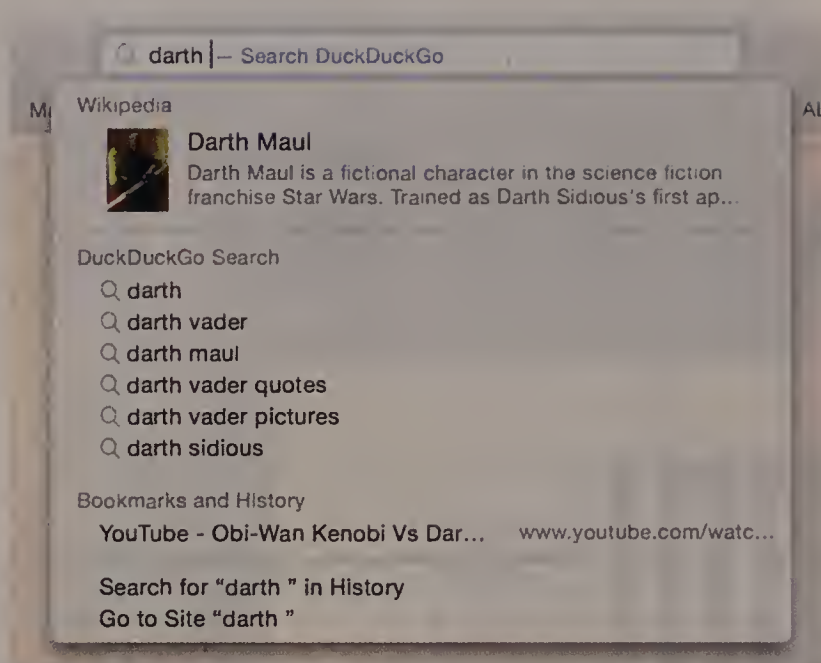
CUSTOMIZED SEARCHES Safari's expanded search feature scours iTunes and Wikipedia, and lets you query specific sites such as Netflix by adding the name of the site to the search.

DON'T TRACK ME
Per-window Private Browsing, long a feature in Google Chrome, has come to Yosemite Safari. Now, if you choose *New Private Window* from the File menu, according to Apple, your browser session will be completely anonymous. An alert appears at the top of the screen when you create a new Private Window; if you dismiss it, the Private Window looks exactly like every other Safari window. But your webpage history won't be saved, none of your cookies will be shared with regular browsing sessions—in short,

> PER-WINDOW PRIVATE BROWSING, LONG A FEATURE IN GOOGLE CHROME, HAS COME TO SAFARI.

PRIVATE BROWSING Safari lets you conduct sensitive Web searches with the certainty that no one is tracking you. You'll know that a window is private if it shows a dark address bar with light text.

your browsing will be a blank slate. (It would be nice if the Private Windows feature were more prominently marked, though. Right now the only hint is that the address bar displays light text on a dark background instead of dark text on light.)

Previously, to browse securely, you had to enable a Safari-wide Private Browsing mode from the Safari menu. That feature is gone, and that's not a bad thing. Moving this feature into the File menu and making it available on a per-window basis will make it much more useful.

Keep in mind, however, that Safari's Private Browsing feature can't completely obscure you: Your device's Internet address and some other basic information about your computer are still passed on to servers.

Another way that Apple is moving toward providing more Web privacy is by integrating the DuckDuckGo search engine, which now joins the previous options of Google, Yahoo, and Bing. DuckDuckGo is most notable for its commitment to not tracking or collecting users' personal data—activities that the more-established search engines engage in.

And within the Privacy tab of Safari's Preferences window, fine-grained options for choosing how Safari stores cookies and website data allow you to limit with more specificity whether websites you've previously visited can track you.

A NEW SAFARI
Yosemite's Safari feels simple and sleek. Its new search and privacy features are welcome. While I'm grateful that I can toggle back on most of the toolbars I rely on, I'm disappointed with the oversimplification of the title bar. Webpage titles are important—they should be visible at all times. Full URLs are important, too, and should be visible (at least as an option). I can accept a basic view of the Web on an iPhone or an iPad, but on my Mac I want the option of seeing more-detailed information, especially since screen space isn't at such a premium.

OTHER APPS

A major update to OS X generally means that many of the apps included with the operating system also get major updates. I've had a chance to spend a little time with Mail, Messages, and Calendar. Here's a look at what's new in those apps.

MAIL GETS MARKUP

My love-hate relationship with Apple's Mail app is currently in a good place. I'm using Mail every day and it's been working fine for me. Still, I was reluctant to test an early version of Mail on Yosemite with my real mailboxes. As a result, I can't testify yet about any potential compatibility issues between Mail and either my personal Gmail inbox or my work's Office 365 mail.

Aside from a few slight interface tweaks—the show/hide toggle that displays the mailbox list is now more properly labeled Mailboxes—Mail looks much the same as it did in Mavericks. But there are some major new features.

One that I really like is Mail Drop, which eliminates the problem of emailing large file attachments. As someone who produces many a podcast, I frequently run into the issue of not being able to attach large files to email messages (the server rejects them). For years there have been work-arounds, largely involving uploading a file to a remote file-sharing service of some sort and pasting a link into the email message.

In Yosemite, that entire procedure is baked in to Mail. If you want to attach a large file to a message, just drag it in and send away. Mail will upload the file to a temporary holding bin on Apple's servers, where it will remain for 30 days. Mail will then replace the attachment in your email message with a

download link to the file. (If your recipient is using Yosemite, Mail will just download the large file automatically.)

Another interesting new addition to Mail is a feature called Markup, which allows you to add simple annotations to images and PDFs directly from within a Mail window. Here's how it works: You click on a file, and an icon appears in the top-left corner of the file's preview. Click it and select *Markup*, and the item zooms out, with a toolbar appearing directly above the item.

Markup is actually an example of the new Extensions technology that's debuting in both Yosemite and iOS 8, in which code from one application can appear inside another entirely separate app's window. In this case, Apple has written a Markup extension that lets you draw lines, shapes, text, and more on PDFs and images. You can stick your signature on PDFs without ever leaving Mail. It's a pretty clever idea.

Unfortunately, I'm not thrilled with the implementation. Marking up a file really does feel like you're using a different program entirely—but one without keyboard shortcuts or a menu bar. I kept pressing ⌘-Z to undo mistakes I'd made in Markup,

Podcast file for you

To: jsnell@interte

Cc:

Subject: Podcast fi

From: jsnell <jsnell

Would you like to send these attachments using Mail Drop?

These attachments may be too large to send in email. Mail Drop can deliver large attachments using iCloud. They will be available for the next 30 days.

Don't ask again for this account

Cancel   Try Sending in Email   Use Mail Drop
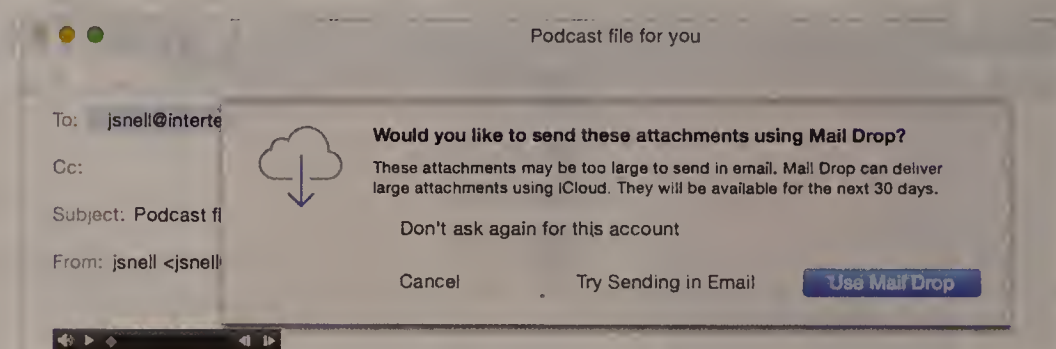
EASIER UPLOADS
Mail in Yosemite asks if you want to use Mail Drop to send large files.

but nothing happened. The Markup controls are pretty simple—they feel more like an iOS app than a part of Mail, to be honest—but they definitely did the trick once I got the hang of them.

Extensions have the potential to dramatically reshape how we use Mac apps, but they will take some getting used to. In the future, if a developer wanted to design an alternative to Markup, users could employ that extension right from within Mail, too. Presumably, other apps could likewise opt to use the Markup extension.

Extensions have a lot of potential, but Markup didn't work so well, and I noticed some bugs. Those bugs are a reminder that this is new technology, and it will take time for everyone—Apple, app developers, extension developers, and especially users—to get accustomed to it.

MESSAGES EMBRACES GROUPS

Messages, Apple's go-to app for iMessage and miscellaneous other chat services (that's clearly the order of priority), gets a bunch of new upgrades in Yosemite that serve to enhance your conversations, so long as everyone is using iMessage. (Messages still supports those miscellaneous other chat services, it's just that the support appears to have

been frozen in amber for several updates. If you truly love instant messaging, as many of my friends do, you'd probably be better off using an app such as Adium for those services and keeping iChat focused on iMessage.)

The marquee feature in Messages on Yosemite is probably Soundbites, which adds a microphone button next to your chat window. Click the button, and you'll be able to record a brief audio message and send it via iMessage. (This feature is probably more useful on iOS devices, where it will arrive as part of iOS 8.)

In my testing, Soundbites worked as promised, though
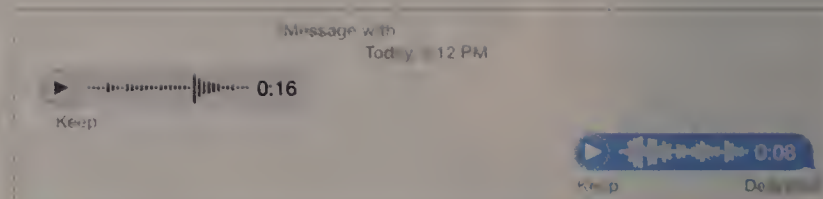
SNIPPETS OF SOUND Here's what an audio conversation looks like with Messages' new Soundbites feature—not exactly informative.

the audio quality left a lot to be desired—messages sounded more like lousy telephone connections than what I've come to expect from computer audio. I'm also not impressed with what a chat window looks like after a series of audio messages: It's just inscrutable bubbles of audio files going back and forth. Maybe some of Soundbites' fancy speech-recognition technology could

> MESSAGES' SOUNDBITES LETS YOU RECORD AN AUDIO MESSAGE AND SEND IT VIA iMESSAGE.

be brought to bear on these messages, so they would be searchable (and even readable at a glance) without making you play them back one by one.

Still, though, there's a lot to be said for asynchronous audio conversations. One of the reasons I text my friends and family instead of phoning them is that most of the time, I don't need to interrupt what they're doing right that second in order to get an immediate response—it's just not that important. With this new feature, especially on iOS, it'll be easy for us to hear each other's voices without demanding immediate attention with a phone call.

Group iMessaging also gets a big boost in Messages. Group messages offer a raft of additional options via a new Details button (although the button looks like hyperlinked text, iOS 7 style, rather than a standard Mac interface element). You and your interlocutors can share your loca-

IN-APP ANNOTATIONS Markup is an Extension that lets you modify images and PDFs right in Mail.

tions using the Find My Friends infrastructure, and the Details view will draw a map showing where every participant is located. You can also kick off phone calls, individual chats, or FaceTime sessions directly from the Details window, and add or remove participants. And just to help you keep track of your conversations, you can give each of your group chats a distinct name, such as "Dinner Plans."

Perhaps most importantly, the new Messages lets you control group conversations that you might want to bail out of—or just not be interrupted by. You can select *Do Not Disturb* to no longer receive notifications from an ongoing group conversation, or click the *Leave Conversation* link to drop out completely.

CALENDAR LIVES FOR TODAY

Apple's Calendar app hasn't undergone as many changes in Yosemite, but there are a few worth noting. When you create a new event, Calendar attempts to learn from previous events you've created and tries to autocomplete your event with likely dates and even attendees. If, say, you often create a "Lunch with Jim" event on Tuesdays at 12:30, and you type "Lunch," Calendar will suggest Lunch with Jim, at
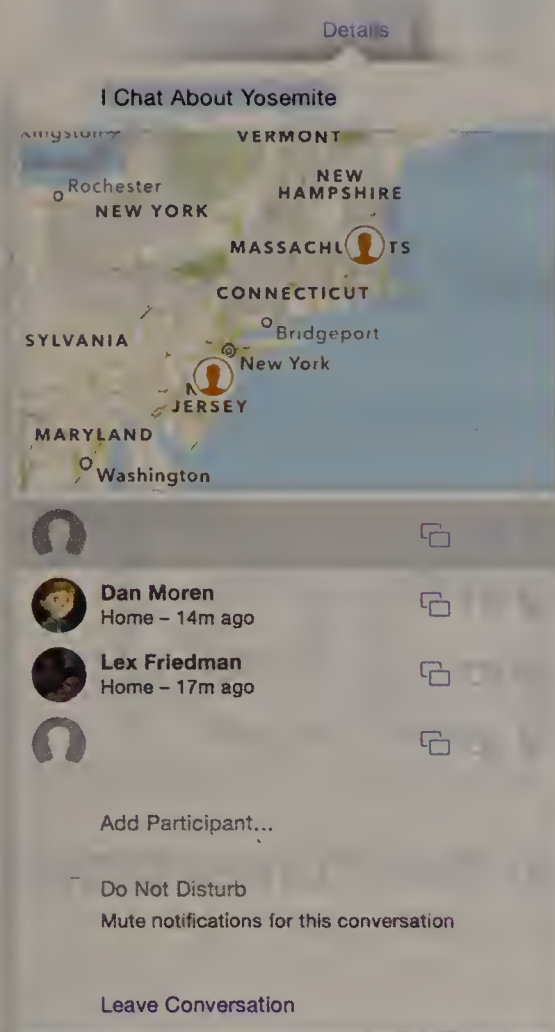
GROUP MESSAGING The Details view in Messages shows a map with your friends' locations and also gives you group controls.

12:30, and will invite Jim.

Apple has overhauled the Day view. It's still a two-pane view, but instead of the (fairly redundant) two daily schedule panes found in the Mavericks version of Calendar, you get a single schedule pane and an inspector pane that shows you

all the details of a selected calendar event. If you create a new event in this view, the inspector pane is where you enter all the calendar information. It beats entering text in the cramped space of the

floating inspector palette.

The Calendar app also has a new option to display an Overlay Calendar: If you need to know today's date in the Islamic, Hebrew, or Chinese lunar calendar, the app can now display any of them alongside the Gregorian calendar system.

iCLOUD DRIVE, CONTINUITY, AND MORE

Unfortunately, I wasn't able to test two of Yosemite's most anticipated features: iCloud Drive and Continuity.

iCloud Drive is essentially a folder on your Mac that syncs with Apple's iCloud service. Any of your devices running iOS 8 will also have access to it, meaning that you'll be able to share files among Macs and iOS devices, even across apps. If that functionality sounds familiar, it's because iCloud Drive works much the way that Dropbox and other cloud-based file services do. The big difference is that Apple has incorporated iCloud Drive directly into its operating systems. (If you're a fan of Dropbox and the like, there's good news on that front, too—the Extensions features that Apple is adding to both Yosemite and iOS 8 will make it easier for those services to integrate with your devices as well.)

> MESSAGES LETS YOU CONTROL GROUP CONVERSATIONS YOU MIGHT WANT TO OPT OUT OF.

Continuity is a broad collection of features that connect your Apple devices. It includes Handoff, a feature that lets you pick up on one device where you left off on another. So, for example, you can start composing an email on your iPhone on the way to work, stop in midstream, and then resume writing the message on the Mac as you sit down at your desk. Similarly, a webpage you're viewing in Safari on your Mac will transfer over to Safari on your iPad.

If you have an iPhone running iOS 8, you'll be able to connect your Mac running Yosemite to it via Wi-Fi and place and answer phone calls as if you were on the iPhone itself. You can also send text messages via your Mac as if they were coming from your phone. There's even an Instant Hotspot feature that lets your MacBook use your iPhone's cellular data connection without making you visit the Personal Hotspot page of your iPhone's Settings app every time you want to turn this option on.

END OF THE TOUR

OS X Yosemite will be available for free to all Mac users this fall. If you signed up for Apple's Public Beta program, you can download it right now. (In fact, you've been able to download it since mid-July.) It's an exciting update that, most impressively, makes the Mac a great partner for iOS devices without making it subservient to them. I'm looking forward to pairing Yosemite with iOS 8 and seeing what develops. Hopefully this fall will be the beginning of a beautiful friendship. ∎

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38

GEMS
MAC
FOR YOUR

FIND SOME NEW FAVORITES IN OUR ANNUAL COLLECTION OF GREAT MAC DOWNLOADS.

Mac software isn't hard to find. The challenge is finding the right combination of features and price. We downloaded and tested more than 100 apps and collected our top picks in the following pages. Since we're covering just a small portion here, visit our regular blog (macworld.com/macgems) and our Twitter feed (@macgems) for more great choices, and look for Mac Gems in the MacUser reviews section of the magazine each month.

ILLUSTRATIONS BY DALE EDWIN MURRAY

INCREASE YOUR PRODUCTIVITY

Draft Control

FREE, $20 | DRAFT CONTROL
DRAFTCONTROL.COM
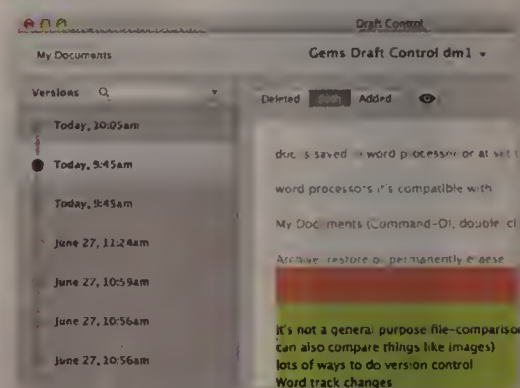
If you want to track changes to plain-text or word-processing documents, just add them to Draft Control 1.1.1 (♦♦♦½), and thereafter, whenever you save a document, the app will take a snapshot of that version. In its preview window, it color-codes all additions and deletions. You can give the versions descriptive labels, and you can organize them into folders. Should you ever wish to roll back to a previous version, you can do so easily. Draft Control is a free download from the Mac App Store, but if you want to track more than one document, you'll have to pony up $20 in an in-app purchase.—**DAN MILLER**

DAY ONE

$10 | BLOOM BUILT | DAYONEAPP.COM

The superb Day One 1.9.5 (♦♦♦♦♦) makes keeping a journal easier than ever, thanks to smart features and a beautiful, welcoming interface. The app offers helpful (if generic) prompts such as "Do you have any favorite pets?" above each new entry window; these little nudges take away some of the pressure of seeing the empty space below. You can also fire off quick entries from an icon on your menu bar. Day One can gently remind you to write something—just tell it what time of day and how often you wish it to prod you. You can add photos, and tag them with keywords and (optionally) your current location. The app lets you back up your journal to iCloud, Dropbox, or the location of your choice; in my tests, syncing worked well after a few initial hiccups.—**NATHAN ALDERMAN**

DOCUMENT WRITER

$10 | XIONG FENG | GO.MACWORLD.COM/DOCWRITER

Document Writer 1.2 (♦♦♦½) doesn't rival Microsoft Word, but it is a step up from Open Office. It has a fairly intuitive interface with all the tools you've come to expect. I especially appreciate the app's ability to export to various formats, and I also prefer how Document Writer handles lists and image inserts (floating and wrapped) compared to Google Docs; kudos to the developer.—**CHRIS HOLT**
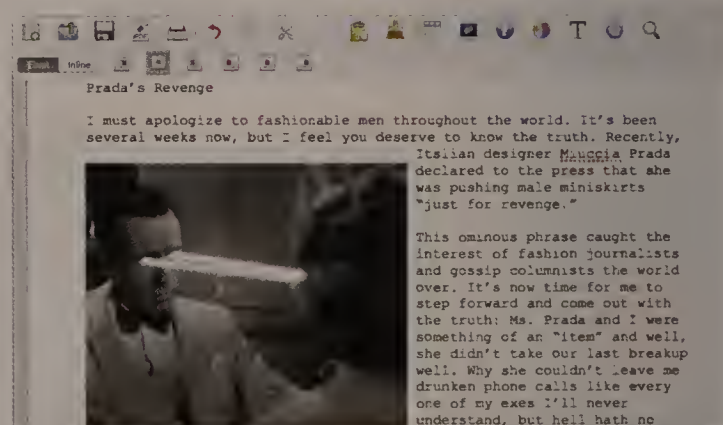
INFOCLICK

InfoClick 1.1 (♦♦♦½) is a supercharged search tool for Mail. When you first launch the utility, it indexes all of the messages in your assorted mailboxes. InfoClick's Normal interface includes six search fields, while the Detailed Search offers more options. Of course, you can use Spotlight to find email messages, and Mail's own built-in search tools are pretty good. But InfoClick allows you to construct tightly defined searches (for instance, messages with a specific file attachment on which your boss was copied but not directly addressed). It also offers a Not switch (so that you can find, say, all messages with a particular attachment that did not also go to your boss). If you're constantly searching for (and not finding) messages in Mail, InfoClick could make your life a lot easier.—**DAN MILLER**
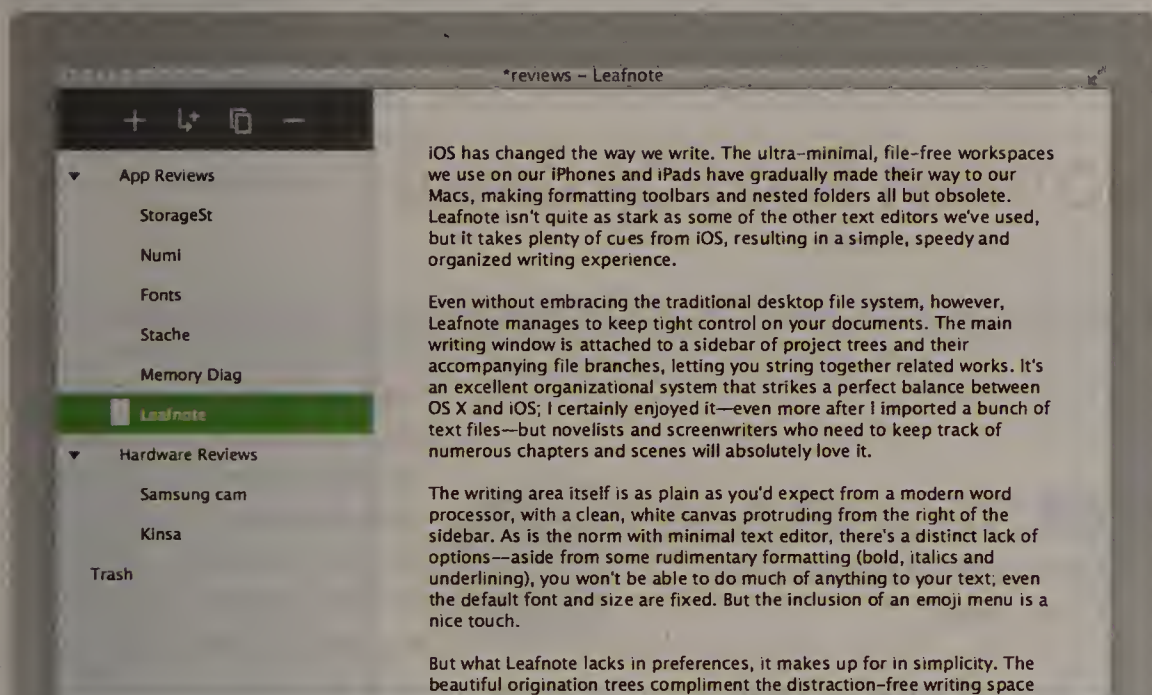
LEAFNOTE
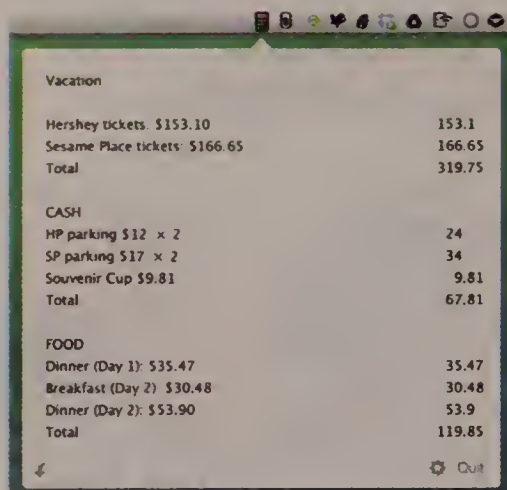
The minimal, file-free workspaces we use on our iPhones and iPads have gradually made their way to our Macs, making formatting toolbars and nested folders all but obsolete. Leafnote 1.03 (♦♦♦½) isn't quite as stark as other text editors, but it takes plenty of cues from iOS in creating a simple, speedy, and organized writing environment. The writing area is as plain as you'd expect from a modern word processor, offering a clean white canvas. As is the norm with minimal text editors, Leafnote has a distinct lack of options, aside from some rudimentary formatting (bold, italics, and underline). Even the default font and size are fixed, but the included emoji menu is a nice touch. The main writing window is attached to a sidebar of project trees and their file branches, which let you associate related works. It's an excellent organizational system that strikes a perfect balance between the approaches of OS X and iOS.—**MICHAEL SIMON**

Marked

Marked 2.3 (♦♦♦♦♦) is a fantastic utility that shows you a live preview of Markdown, HTML, and XML files. The app provides a slew of keyword-highlighting features in its previews. It also includes default lists of overused phrases that it suggests you avoid or replace, but at any time you can add your own words and phrases too. Another useful highlighting feature is Visualize Word Repetitions, which highlights words you've used repeatedly. Marked can watch your text for passive voice as well, and it can provide document statistics such as the number of paragraphs, sentences, and characters, plus readability metrics (reading ease, grade level, and clarity). One of my favorite new features is the option to have Marked monitor an entire folder of text files, automatically previewing the one that you have edited most recently. And a new Preview Clipboard feature allows Marked to display a preview of the clipboard's contents—for example, if you've copied some Markdown or HTML text from a website or document.—**DAN FRAKES**

Vacation	
Hershey tickets $153.10	153.1
Sesame Place tickets $166.65	166.65
Total	319.75
CASH	
HP parking $12 × 2	24
SP parking $17 × 2	34
Souvenir Cup $9.81	9.81
Total	67.81
FOOD	
Dinner (Day 1): $35.47	35.47
Breakfast (Day 2) $30.48	30.48
Dinner (Day 2): $53.90	53.9
Total	119.85

NUMI

$10 | DMITRY NIKOLAEV | GETNUMI.INFO

Not much about Numi 2.0.1 (♦♦♦♦) resembles a traditional calculator; it looks more like a text editor. But as you type, Numi scans for numbers and nearby arithmetic functions, and solves anything you throw at it. It's lightweight enough to rest in the menu bar or dock, but it feels like a freeform version of Numbers. You can easily edit and explain your figures, and Numi remembers your last state. While the app records quotients and sums as instantly as a standard calculator, things can get tricky, especially when you're dealing with multistep problems. Once you master Numi's unique language, though, you will never want to use Calculator again.—**MICHAEL SIMON**

NEWS NOTIFICATIONS

$1   DEVIATE   GO MACWORLD.COM/NEWSNOT

As straightforward as its drab title implies, News Notifications 1.1.3 (♦♦♦½) lets you add feeds from Web sources so that they appear in Notification Center—that's about it. Input a URL, and the app seeks out the correct feed link; for sites with specialized categories or sections, you can point it toward a specific RSS feed. You can choose how many stories to see from the site at once, and how often the app should check for updates. Stories will then pop up throughout the day via notifications with the title and posting time listed. News Notifications is a useful choice for simple, local feed tracking.—**ANDREW HAYWARD**
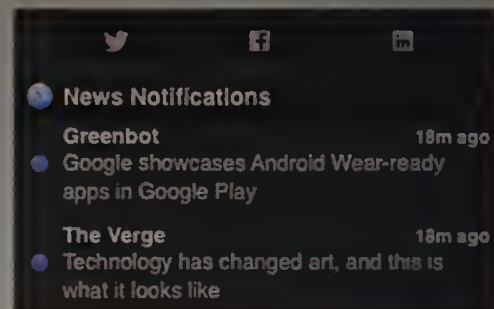
NOTIFIER PRO FOR GMAIL

$1 | SOVAPPS | SOVAPPS.COM

Notifier Pro for Gmail 1.2 (♦♦♦½) puts a tally of unread email on the menu bar, letting you click to drop down a preview of the past ten inbox messages with the sender and subject listed. Clicking a note immediately pulls the message up in your default browser; if you prefer, you can click the "Go to Inbox" option and be there within seconds. The drop-down menu also lets you quickly mark a message as read or send it to the trash, but the app lacks the ability to archive an email or file it in a folder. Notifier Pro allows you to plug in multiple Gmail accounts and monitor all of them at once, which is a major benefit to anyone who has separate personal and work accounts. —**ANDREW HAYWARD**
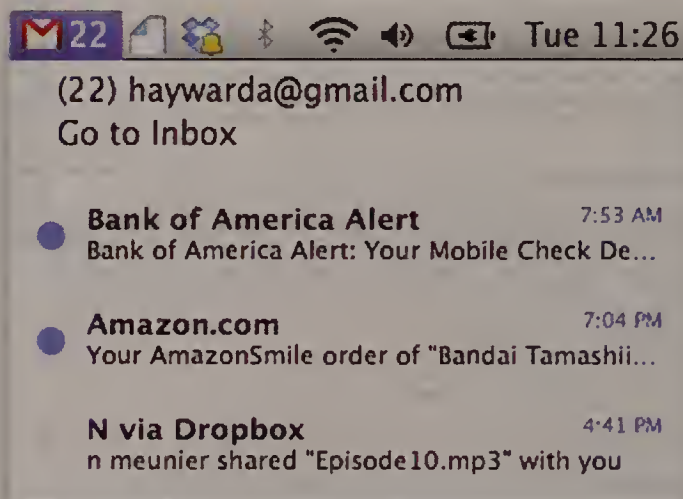
Parcel

FREE, $2 YEARLY SUBSCRIPTION | IVAN PAVLOV | PARCELAPP.NET

Parcel 1.2.2 (♦♦♦♦) provides a central location to keep tabs on your package tracking numbers, with automatic updating and the ability to sync to the iOS version of the app. You can input a tracking code from USPS, FedEx, or UPS, plus numerous international options. A premium subscription, priced at $2 per year, adds notifications, the ability to track more than three packages at once, and the option to access your data on the Web.—**ANDREW HAYWARD**

Prices Drop Monitor for Amazon

If you want to get the best deal for your dollar, the handy Prices Drop Monitor 4.4 ($$$½) can help you out—assuming you do most of your shopping on Amazon. Prices Drop Monitor displays a little shopping cart in your menu bar; selecting Manage Items brings up the app's main window, a list in which you can add Amazon products whose prices you want to track. Click the plus button and paste in an Amazon URL to add an entry, or drag a URL from Safari onto the menu-bar icon. The app then checks every 4, 8, 12, or 24 hours to see if the prices have changed, and notifies you. By default the app badges the menu-bar icon and turns it blue upon spotting a change; you can also opt to be notified by Growl, Notification Center, a beep, or an email.—**DAN MOREN**

RECIPES

Recipes 1.0.1 ($$$½) gives chefs of all skill levels a digital box for saving, finding, and consulting recipes. The elegant interface captures all the essential elements. A separate grocery list is also available, but the app doesn't offer a way to populate that list with a recipe's ingredients, or to sync it with the Reminders app. The app can import cooking instructions from a website of your choosing. The search functionality works well, too, although it doesn't seem to extend to step-by-step instructions or the ingredients list.—**MARCO TABINI**

STACHE

Bookmarking apps are hardly novel in this post-PC world, but Stache 1.0.1 ($$$½) does its job a little differently. Stache delivers a personal experience that doesn't merely store your links—it creates a corner of the Web containing only the particular sites you care about. You won't find the usual list of collected links; the interface has a definite Top Sites feel, with homepages and articles arranged as large previews in a neat grid. The app's visual layout lets you navigate a mountain of links in a flash, but it's even faster to use the search bar, which quickly trawls every webpage in its entirety to find the object of your query. You can manually enter URLs to store them in Stache, but the superior method is to use the convenient one-click Safari and Chrome extensions.

—**MICHAEL SIMON**

MANAGE YOUR MAC

Cloud Commander

$5 | DE VOORKANT | CLOUD-CDR.COM

If your files are scattered among numerous cloud storage accounts, Cloud Commander 3.7.4 (♦♦♦½) decreases the insanity. Through it you can connect to your Bitcasa, Box, Copy.com, Dropbox, Flickr, Google Drive, Microsoft OneDrive, Picasa, and SugarSync accounts. It can also act as a WebDAV or FTP client. After connecting your accounts, you can open them in Cloud Commander, and then drag and drop files and folders around. <Control>-click or right-click an item to rename it, delete it, or (for most services) get a sharable link to it. You can get a QuickLook preview, too, and you can open multiple Cloud Commander windows to copy files between accounts.—**JONATHAN SEFF**

ETRECHECK

FREE | ETRESOFT | ETRESOFT.COM

EtreCheck 1.9.12 (♦♦♦♦) collects statistics about your Mac's hardware, apps, kernel extensions, and more. It samples your system to find out which programs are taking the most RAM and CPU resources. The utility's text report is neatly organized by category, and you can copy it to your clipboard and then paste it into an email, for instance, or on a help forum. EtreCheck quickly gathers data that normally requires poking around a dozen or so sources on your machine; it lets you focus instead on resolving your Mac's problems.—**MARCO TABINI**

DISK DIAG

$6 | ROCKY SAND STUDIO | ROCKYSANDSTUDIO.COM

The bigger hard drives get, the more likely it is that unwanted files will clutter up your disk. Launch Disk Diag 1.2 (♦♦♦♦), and in a few seconds it shows how much space it can free up for you. After you've made any necessary tweaks, sit back and watch as Disk Diag chews through its targets.—**NATHAN ALDERMAN**
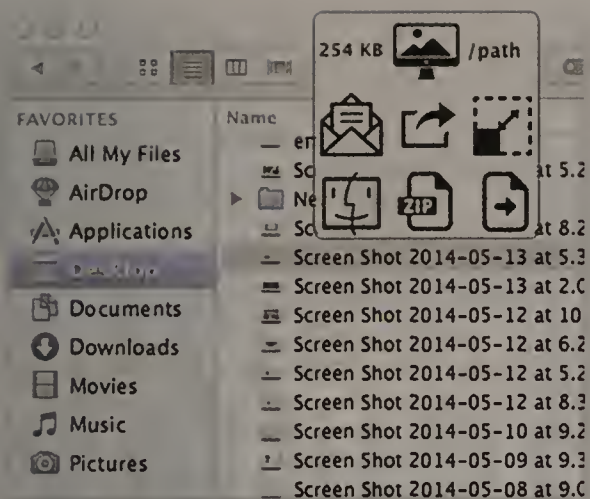
FILEPANE

Offering quick access to helpful actions, FilePane 1.2 (●●●●½) works not only with files but also with images and text on websites and in documents. Clicking and dragging any file, image, or text block prompts a Drop Here icon to appear. Dropping the item pulls up a command box from which you can resize an image, print a file, create an archive or PDF file, send a file via email or AirDrop, or post the item to Facebook or Twitter, among other actions. It takes some getting used to, but it helps you cut out steps and work both smarter and harder.—**ANDREW HAYWARD**

FLEXIGLASS

Flexiglass 1.5.3 (●●●½) takes a neat approach to window resizing: With it, you can use keyboard shortcuts and multitouch gestures to move your windows from place to place without dragging and dropping. In addition, you can use several keyboard shortcuts to resize windows to a certain portion of the screen—for instance, centering a window, or making it expand to fill the top half of the screen only. Assorted little preferences offer remapping of certain window functions: double-clicking on the title bar to maximize the window, mapping the green Zoom button to maximize the window fully, and mapping the red Close button to quit the app.—**SERENITY CALDWELL**

Folderol

I miss the colored folders of old in the Finder, as I used those shades as quick-glance indicators. Folderol 1.7 (●●●½) helps, as it lets me colorize the icon of any folder (it doesn't work with files). Just click a default hue, or click the swatch to select one in the OS X color picker. Drag one or more folders into the large area above, and Folderol gives each one your chosen color. You can even apply both a custom image and a custom color by dragging the image into the Custom Image well, selecting a color, and then dragging in the folder icon you wish to modify.—**DAN FRAKES**

FRUITJUICE

FruitJuice 2.2.1 (●●●●) aims to keep your battery healthy by telling you when and for how long you'll need to unplug your machine each day. FruitJuice tracks your previous week's battery behavior and then recommends that you keep your laptop unplugged for 20 percent of the time you typically use it. You can configure a small but legible menu-bar icon to display how many minutes of unplugged time remain, and reasonably unobtrusive notifications indicate when you're free to plug in again. Clicking the menu-bar icon reveals a clearly structured and useful list of information and options. FruitJuice can also walk you through a once-every-30-days maintenance cycle.—**NATHAN ALDERMAN**

Head for Facebook

$1 | SQUIDMELON | GO.MACWORLD.COM/HEADFACEBOOK

Head for Facebook 1.0 (●●●●) is a tiny circle that lives on a corner of your screen and, when clicked, presents the Facebook.com website in a Web view (mobile or desktop), blurring out the rest of your desktop. Another click, and the website disappears. Given that Facebook has no desktop client, Head offers a nice way to separate your social media interactions from your day-to-day Safari or Chrome use. I like it because, as with my Twitter client, it's an app that I can check on regularly scheduled breaks, rather than keeping a tab on my browser, which distracts me from productive tasks. (And I don't even use Facebook all that often—imagine how useful this app could be if that's your primary social network.) The app provides only one Web view—you can't open multiple Facebook tabs within it. But I find that the restriction adds to its charm, keeping you focused on a single aspect of the social networking service.—**SERENITY CALDWELL**

IBETTERCHARGE

FREE | SOFTORINO | SOFTORINO.COM

Using iTunes Wi-Fi syncing to keep tabs on your iOS device's battery, iBetter-Charge 1.0.5 (●●●●●) gives you four options for notification thresholds: When your iOS device's battery reaches 50, 20, 10, or 5 percent of its capacity, you'll see a notification on your Mac reminding you to plug your device in. Other options include animation of the menu-bar icon and standard system alerts, all of which remind you to keep your battery where it needs to be so that you can use your iOS device all night. Well designed and easy to use, iBetter-Charge monitors your battery so you don't have to.—**JEFFERY BATTERSBY**
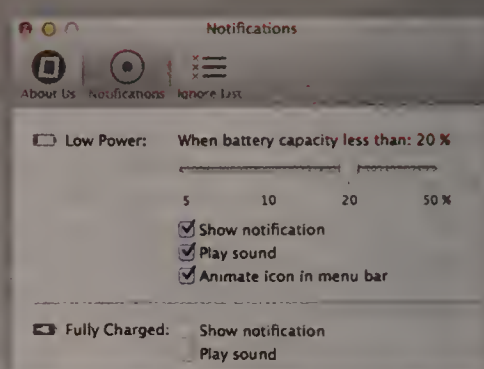
LOGVIEWER FOR TIME MACHINE

$3 | CRITICAL SPARK | CRITICALSPARK.COM

When Time Machine suffers from a glitch, what went wrong isn't always clear, as the relevant information is buried in OS X's system logs. LogViewer for Time Machine 1.0.5 (●●●½) parses the logs, finds the Time Machine backup data, and formats it. Errors display in easy-to-spot red type. Upon launch, the app shows the most-recent backup, but you can also browse any other backup entries in your log.—**DAN FRAKES**
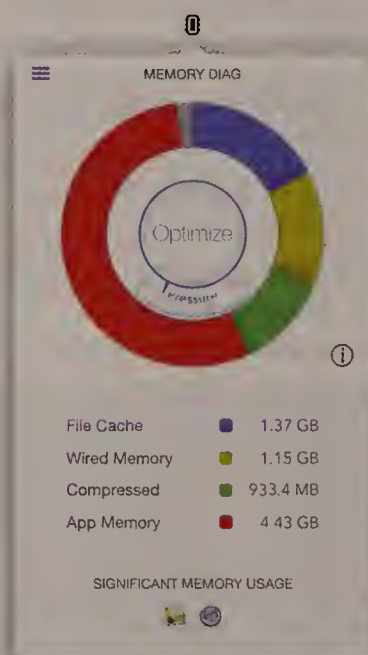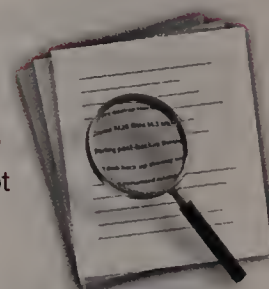
MEMORY DIAG

FREE | ROCKY SAND STUDIO | ROCKYSANDSTUDIO.COM

Apple has always offered a way to track memory usage in Activity Monitor, but Memory Diag 1.0.1 (●●●●) conveniently places that data in the menu bar. A thermometer icon gives you an approximation of how much RAM your system is using. Clicking that icon produces a wealth of information, most notably a color-coded pie chart that breaks down your memory allotment and tells you which apps are consuming the most resources. A second screen summarizes the available memory and the amount of RAM installed in each slot. The app's best feature is its ability to optimize your Mac's RAM usage: Clicking the center button purges unused and unnecessary processes. The utility mostly did well at easing my system's minor memory strains, but unfortunately it doesn't work when usage is at critical levels.—**MICHAEL SIMON**

NETWORK RADAR

$20 | DANIEL DIENER | WWW.MAC-ATTENDER.COM

Apple's own Network Utility is pretty useful for basic network troubleshooting, but if you need to go above and beyond what it offers, Network Radar 1.1.11 (♦♦♦♦) is a powerful step up. Network Radar offers many common network tools, including ping, port scan, and whois. But it doesn't stop there: The app can quickly scan your entire network and display a list of connected devices, along with their IP addresses, what services they offer, and more. If you need fast access via services such as Telnet, SSH, or HTTP, you can access those options for any device by right-clicking its entry. One of Network Radar's most powerful tools is its ability to monitor your devices in real time and send notifications when they come online or go offline—a great help for troubleshooting, especially for anyone who maintains a lot of different machines.—DAN MOREN

PlainText-Menu

$1 | ALFRED DANNY | GO.
MACWORLD.COM/PLAINTEXTMENU

If you frequently copy and paste formatted text, you might just adore PlainTextMenu 1.0 (♦♦♦♦½), which strips out colors, formatting, bold text, and all the pesky things that make sharing text between programs a pain. The app offers a trigger so that you can have all text converted automatically or choose when to de-decorate your copied text. You also get options to autoconvert to all uppercase, all lowercase, or sentence capitalization. The app offers no settings menu, and no other flashy features. But it doesn't need to.
—SERENITY CALDWELL

STORAGESTATUS

$3 | SUBTLE B | SUBTLEBLLC.COM

No matter how much internal storage I have in my Mac, I still keep an arsenal of external drives for backups, music, videos, and anything else I don't want bogging down my day-to-day machine. Once I've plugged those drives in, though, I tend to forget about them, to the point where I pull them out without ejecting the volumes first. Storage-Status 1.2.1 (♦♦♦♦½) didn't just alleviate my absentmindedness—it taught me to identify drive cycles so as to maximize efficiency. This app recognizes any drive installed in or connected to your Mac, and puts icons in your menu bar. When a drive changes state, the corresponding icon changes color to indicate whether it is active (green), idle (yellow), or sleeping (red). You can customize which drives the app tracks and how often notifications appear, and you can instruct it to log activity to the Console app for investigation.—MICHAEL SIMON

You might know **Joshua**.
He loves video games, and he
owns enough to know they're not
all meant for kids. That's why he
reminds his friends (at least the
ones that have kids) that they all
have big black letters on the box
to help parents find the ones that
are best for their families.

You can learn about those
ratings at **ESRB.org**

Los Angeles, CA

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CONTENT RATED BY ESRB	CONTENT RATED BY ESRB	CONTENT RATED BY ESRB	CONTENT RATED BY ESRB	CONTENT RATED BY ESRB	CONTENT RATED BY ESRB
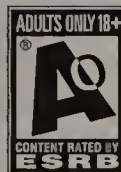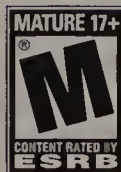
UNLEASH YOUR CREATIVITY
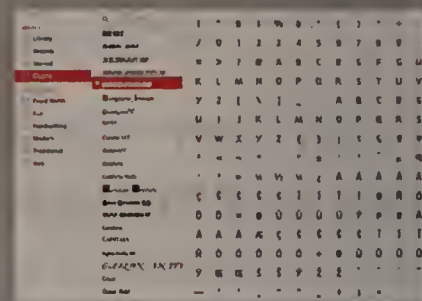
Keeping track of all your type sets can be a hassle. Offering an elegant interface focused on organization, Fonts 1.0.2 (♦♦♦½) fills its iOS-style window with a list of every typeface it finds. Giant letter previews let you zip through dozens of fonts. Clicking one brings up a list of styled letters, numbers, and symbols, plus sample paragraphs. You can skim variations by running your cursor across the square, too. I noted a few random display issues, but for the most part I browsed my sizable font collection with ease.—**MICHAEL SIMON**
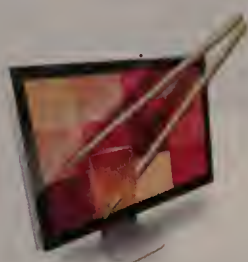
ColorSnapper

$5 · KOOLE SACHE | COLORSNAPPER.COM

Apple's DigitalColor Meter utility magnifies the contents of the screen under the mouse pointer and lets you copy the RGB color components of the chosen pixel. ColorSnapper 1.1.1 (♦♦♦♦) takes the concept a little further. The app resides in your menu, where you can invoke it with a mouse click or a global shortcut. It runs quietly in the background until you call it into action, at which point it shows a loupe that magnifies the area around the pointer. Click to copy the color of the pixel beneath your pointer to the clipboard in one of several formats, from bare RGB or HSL values to preformatted strings that you can use in a graphics editor or in a webpage's style sheet.—**MARCO TABINI**
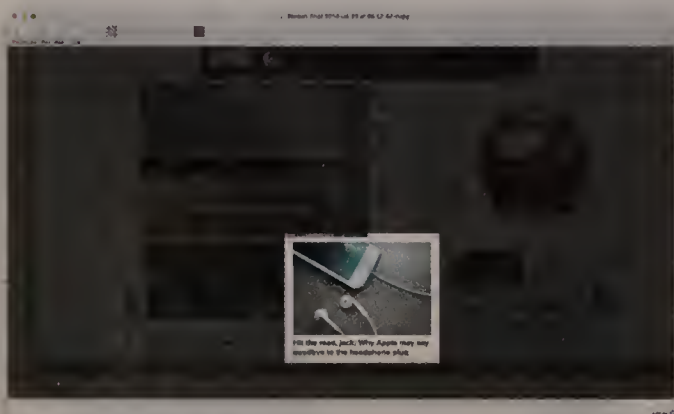
LIGHT UP

$3 | RESTACKS | RESTACKS.COM

With Light Up 1.0.3 (♦♦♦♦), you can load an image from a file and block out portions with a mask whose darkness you can adjust. You can then carve sections—rectangles, rounded rectangles, and ovals—out of the mask, thus highlighting parts of the underlying image. This app supports common image formats such as PNG and JPEG, but it does not support Photoshop files, nor does it let you capture an image from a webpage. Even so, it's a great, intuitive tool that focuses on a single task.—**MARCO TABINI**

Power Shot Version 1.0
Copyright Team Apollo Ltd 2014

Screen Shot Hotkey

^⌘X

Launch at Login Test

Quit Powershot

POWERSHOT

$1 | APOLLO | GO.MACWORLD.COM/
POWERSHOT

The lightweight and efficient Powershot
1.0 (★★★★) lets you set keystrokes for
screenshots, target the areas a screen-
shot will cover, and specify what will
happen to the image file. It also allows
you to add elements and annotations to
the finished product.—**CHRIS BARYLICK**

SNAPNDRAG PRO

$10 | YELLOW MUG SOFTWARE | YELLOWMUG.COM

SnapNDrag Pro 3.5.6 (★★★★½) simplifies the screenshot capture and
organization processes. It supports several capture types, including
selection, window, screen, and timed. You can rename your shots
individually, or you can select several and use the Batch Rename
feature to give a name and sequence number to every image. What
makes this app a standout is its
support of multiple screens with
separate Spaces and annotation
of original images when you open
them within the SnapNDrag Pro
app.—**JEFFERY BATTERSBY**
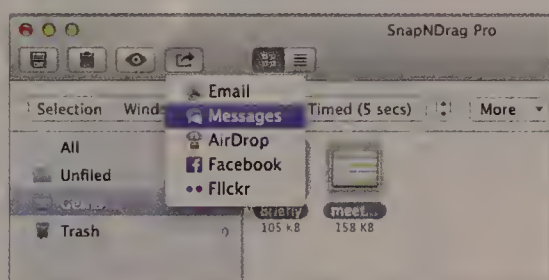
Watermarker

$8 | REACTIV CODE |
WATERMARKERAPP.COM

If you're interested in
stamping images with your
imprint, Watermarker 1.3
(★★★★½) supports three
types of watermarks: text,
image, and strike-through
(diagonal lines crossing
from opposite corners). You
can control most of the
aspects of your watermark,
including its position, which
you customize by dragging
it or setting it to one of the
corners or the center. You
can also change the font
family and size (though not
the style), and even the
watermark's opacity. To
apply watermarks to mul-
tiple images at once, you
simply drag multiple files in,
tweak the settings as you
like, and then drag the
images out to a Finder
window. Watermarker will
even rename the edited
images.—**MARCO TABINI**

SNAPHEAL

$15 (STANDARD), $40 (PRO) | MACPHUN | MACPHUN.COM

Snapheal 1.2 (★★★★) lets you tweak an image's technical parameters, adjust
exposure settings, and remove unwanted features. After you select an unwanted
area, the app can use algorithms to replace that portion with content cloned from
elsewhere in the photo. Because Snapheal lets you apply its various tools to
certain areas, you have absolute control over the final look, and you can create
"hyperreal" images. The Pro edition, available via the developer's website, has
more-sophisticated algorithms, but both apps are excellent.—**MARCO TABINI**

ENJOY YOUR AUDIO

AudioSwitcher

$1 | PAUL O'NEILL |
SERIALANGELS.CO.UK

Do you have a lot of audio inputs and outputs, and need to switch among them quickly? The AudioSwitcher 2.16 (♦♦♦♦) menu-bar utility is fantastically functional. The app allows you to adjust custom volume settings for each external speaker without altering the maximum volume on your computer. You can even fiddle with the sample rates. Other options include the ability to ignore speakers, show the current volume percentage next to the menu-bar icon, and open the app at login.—**SERENITY CALDWELL**

CONTRIBUTORS

Serenity Caldwell, Dan Frakes, Dan Miller, and *Dan Maren* are *Macworld* editors. *Nathan Alderman, Chris Barylick, Jeffery Battersby, Andrew Hayward, Chris Holt, Jonathan Seff, Michael Siman,* and *Marca Tabini* are freelance contributors to *Macworld.*

BITPERFECT

$10 | BITPERFECT SOUND |
GO.MACWORLD.COM/BITPERFECT

An audiophile's dream, BitPerfect 2.0.1 (♦♦♦♦) opens a world of clearer, more present sound than you ever thought a Mac's speakers could produce. After the app scans your music library, enable it and run iTunes normally—you'll hear a difference like night and day as BitPerfect upscales the audio. Add a slew of customization options, and this app has enough to keep any music fan happy.—**CHRIS BARYLICK**

EQUILIBRIUM

$3   SUNFLOWER SOFTWORKS
SUNFLOWERSW.COM

Through the Equilibrium 1.0 (♦♦♦♦) menu-bar item, you can control iTunes, Spotify, Rdio, and Vox (and scrobble tracks on Last.fm). You can turn shuffle or repeat modes on or off, and access AirPlay options for sending the audio to other speakers. Additionally, you can enable a desktop controller that displays album art for the current track; when you mouse over the controller, it changes to show the song, artist, and album, along with playback controls.—**JONATHAN SEFF**

INTERMISSION

$15 | ROGUE AMOEBA | ROGUEAMOEBA.COM

Intermission 1.1.0 (♦♦♦½) brings TiVo-like pause, rewind, and skip functions to your Mac's audio. It's a great option if you want to hear an iTunes Radio track over and over. And you can start playback with up to 3 hours of buffer, skipping as much as you like.—**DAN FRAKES**

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WORKING MAC

How I Make Finder Tags Work for Me

Organizing your files doesn't have to be complicated. Check out this simple seven-tag system.

BY MATT GEMMELL

I've always struggled to use file-tagging systems. My tendency is to overapply Finder tags, so I wind up with hundreds of different ones, a result that barely provides more retrieval value than just searching by the files' contents. Since modern operating systems constantly index everything, I see tags as more of an organizational and categorization system.

Over time I've found a simple tagging system that seems to work for me, and I thought I'd share it with you.

WHAT I WANT IN A TAGGING SYSTEM

I have a few prerequisites for any type of tagging system:

> I don't want to use tags in place of hierarchical folder organization. I can't get out of the habit of using folders and subfolders, and I'm not comfortable with the concept of using tags to partially replace that system. So if I can express something about a file by where it lives, I take that approach.

> I don't want to create tags that overlap anything that's part of a file's content or existing metadata. Doing so seems redundant to me, and just another thing that I'd need to maintain. Spotlight's indexing is excellent, and I'm happy to trust it to do its job.

> Tags come in seven colors (not counting the No Color option). I want to use each color exactly once, so that the

colors are meaningful when I see them in the Finder. If a color has more than one meaning, I might as well not have that information visible at all.

> As with any categorization system, I want to limit the number of categories any file would have. One category is ideal, and two is okay. Any more than that means I'm probably violating my first two prerequisites.

> I want the vast majority of my stuff not to have any tags at all, again so that the tags are meaningful. If my system requires tagging lots of files, I won't use it. Life's too short for that kind of house-keeping. Also, when I search for a given tag, I want the list of results to be as short as possible.

MY NEEDS

I'm a writer, so I tend to work with various kinds of text files. I usually have a lot of files, most of which are small in size.

I have a number of clients, but not many at any one time. I have a few simultaneous projects going, but again not many of them—perhaps five to ten at most. Those are manageable quantities to deal with; I can be completely aware of everything I'm working on at the moment without any confusion. I'm fortunate to have such a simple work situation. I have, however, also used a similar organization scheme when I was making software.

In any case, my organizational system is based on a few simple concepts:

> I have a very small set of active projects.

> I have two other types of documents that I need to keep track of: ideas for future projects (very important for me), and reference material I'm working with.

> My documents fall under one of the following three stages: currently being worked on, submitted and awaiting publication, and done. The second state is obviously important for invoicing and various other business reasons. The last one doesn't require a tag, because that would mean tagging lots of stuff.

> I retain absolutely everything, of course, but some old files are more important than others. So apart from the Everything category, I classify my materials as essential information that is vital and/or irreplaceable, and things that I should always keep. And it's critical to distinguish between "just keep it around" and "this is really important."

MY TAGS

All of those requirements lead pretty naturally to a seven-tag system that I've split into three different categories.

Type-of-content tags: *Writing* is the tag that applies to most files, and it indicates that the file contains things that I have written. I can very quickly find my own body of work with this tag.

Ideas is my tag for a series of files that each contain ideas for possible future articles, stories, and such. I have this tag for each appropriate category of work: blog article ideas, short stories, magazine pieces for each publication, and even novels. When I'm brainstorming, I can very easily pull up my collection of ideas.

Reference serves to mark reference material. It includes background reading, briefs, page layouts for a magazine piece giving a sense of how the article will flow (and the all-important character count per section), or even extracts from email threads or chats where I discussed the work. I keep these files within their own projects or the general category of work (blog, stories, etc.).

Status tags: *Active* marks my set of current projects, namely those that I'm working on within the current two-week period or so. I find it very useful to occasionally bounce between active projects for a change of pace, and to know what's on my plate. I also use this tag to queue up ideas that I intend to write about in the next week or thereabouts: I usually transfer the idea to a file of its own, mark it as Active, and then get to it when I'm ready.

Pending means that I have completely finished a piece of work (including all edits) and have submitted it in its final form for publication. I review these items whenever a new piece comes out, or every couple of weeks. I also tend to use this tag in the special case that a publication requires a limited exclusivity period: I leave the piece marked as Pending during its exclusivity period, and then remove the tag afterward. I thus know which pieces are (or aren't)

> ### I don't want to create tags that overlap anything that's part of a file's content or metadata. That seems redundant.

available for republication elsewhere.

Retention-policy tags: *Important* means that a file contains vital information that I might need to access at a glance. It's a tag that jumps out at me in a folder. I use it for things such as government identification numbers, financial information, contracts, and such.

Archive is my "just keep this thing, even if it doesn't look interesting anymore" tag. I use this tag for my copies of invoices, commissions, installers, and uninstallers—stuff that I'd be wise to keep a local copy of. I also use this tag for bank statements, and items of that sort. It essentially means "if you must delete other stuff, at least don't delete this."

That's the entire tagging system. I told you it was simple.

MULTIPLE TAGS

I try to avoid using more than one tag, and my system is designed to avoid that situation wherever possible. I've encountered a couple of exceptions to this rule, however.

Writing and Active obviously come up together a lot. Since active status is most important to me, I tend to mark the project folder with the Writing tag, and then classify the work file itself with the Active tag. I employ the same process whenever I use the combination
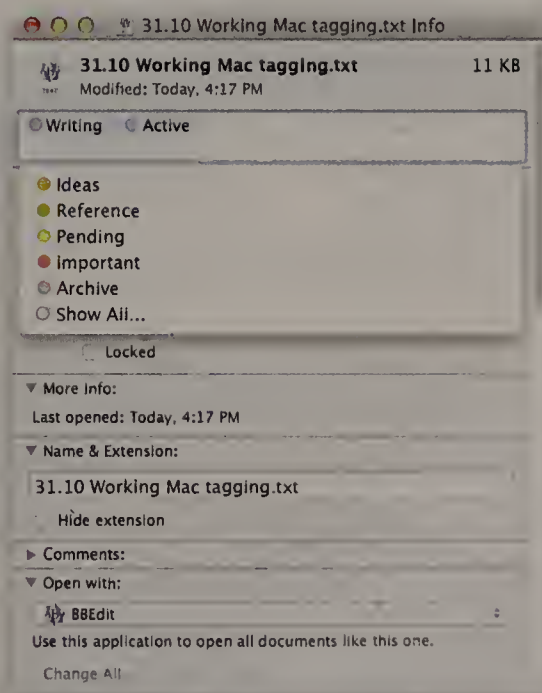
DOUBLE DUTY Sometimes you can't avoid attaching multiple tags to a single file.

of the Writing and Pending tags.

I could also combine Important or Archive with the Reference tag. In practice, however, if a piece of reference material is no longer currently useful, I just remove that tag.

USING TAGS

You can easily apply and search for tags in many different ways while you're working. For example, you will find a Tags button in the Finder's toolbar, and you can also edit tags in a file's Get Info window. Both of those methods are quite fiddly, though. I prefer to specify the tags as soon as I save a file, using the Tags field in the standard Save dialog box. Doing so autocompletes the tags, and it also shows a drop-down menu so you can choose your tags from it.

You'll probably want to rename a tag, change its color, or even delete it at some point, too. You can do all of those things from the Tags tab in the Finder's Preferences window.

Simply right-click the tag you want to

edit. You can then choose which tags show in the Finder sidebar, and rearrange them by dragging. You can also click any of those tags in the Finder sidebar to view a list of files to which you've applied the given tag.

I sometimes want to apply other tags after I've created a file, such as when I want to change the file's status. I could easily do that through a menu command in the Finder (File → Tags), but I'm a fan of using keyboard shortcuts, so I went into System Preferences to apply a keyboard shortcut to that command.

This is quite simple to do: Open the Keyboard preference pane and select the *Shortcuts* tab. Then choose *App Shortcuts* from the list. You'll want to
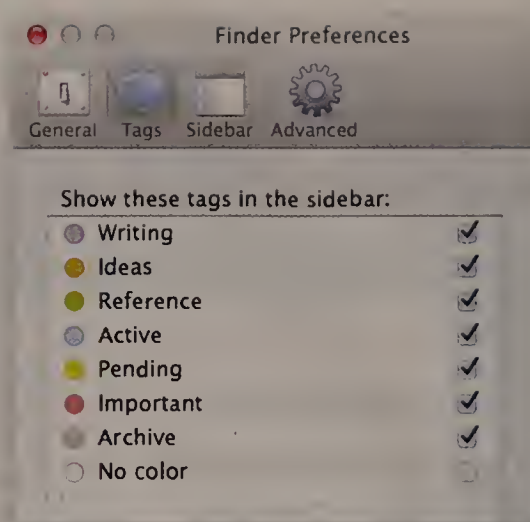
CUSTOM TAGS You can easily choose which tags to display in the Finder sidebar.

create an entry for the Finder, within which you type the **Tags…** command name exactly. Note that it contains an ellipsis at the end, not three periods, and that you can type that punctuation mark by pressing <Option>-; (semicolon). Once you've created the shortcut, you can quickly trigger the Tags pop-up menu. My shortcut is ⌘-<Control>-<Shift>-<Option>-T, which I call "quadruple-splat-T."

You can also search for files with your chosen tags by using your favorite application launcher. If you're using Spotlight, type **tag:** and then immediately start typing the name of a tag.

If you're an Alfred fan, make sure you have version 2 or later, and then type **tags** followed by the name of a tag. If you prefer LaunchBar, make sure that it is version 6 or later; then type **tags** and select the tags option. Each listed tag hierarchically contains all relevant files. LaunchBar even lets you add and remove tags right from its interface.

A SIMPLE, PRACTICAL SYSTEM

Tags are safe to use on multiple Macs. If you're signed in to the same iCloud account on all your machines, your tags will remain synced, including the sidebar order and colors.

The tags attached to files are preserved too, including in Dropbox, which is extremely handy. The service didn't preserve tags in the past, but it does now.

That's about it. Many file-organization systems are available for use on modern Macs, and for some people tags seem like an unnecessary complication. But by being strict about how I use them, and realistic about what I want from them, I've found a system that isn't burdensome to maintain and helps me manage my workflow each week. I can't ask for much more than that. ∎
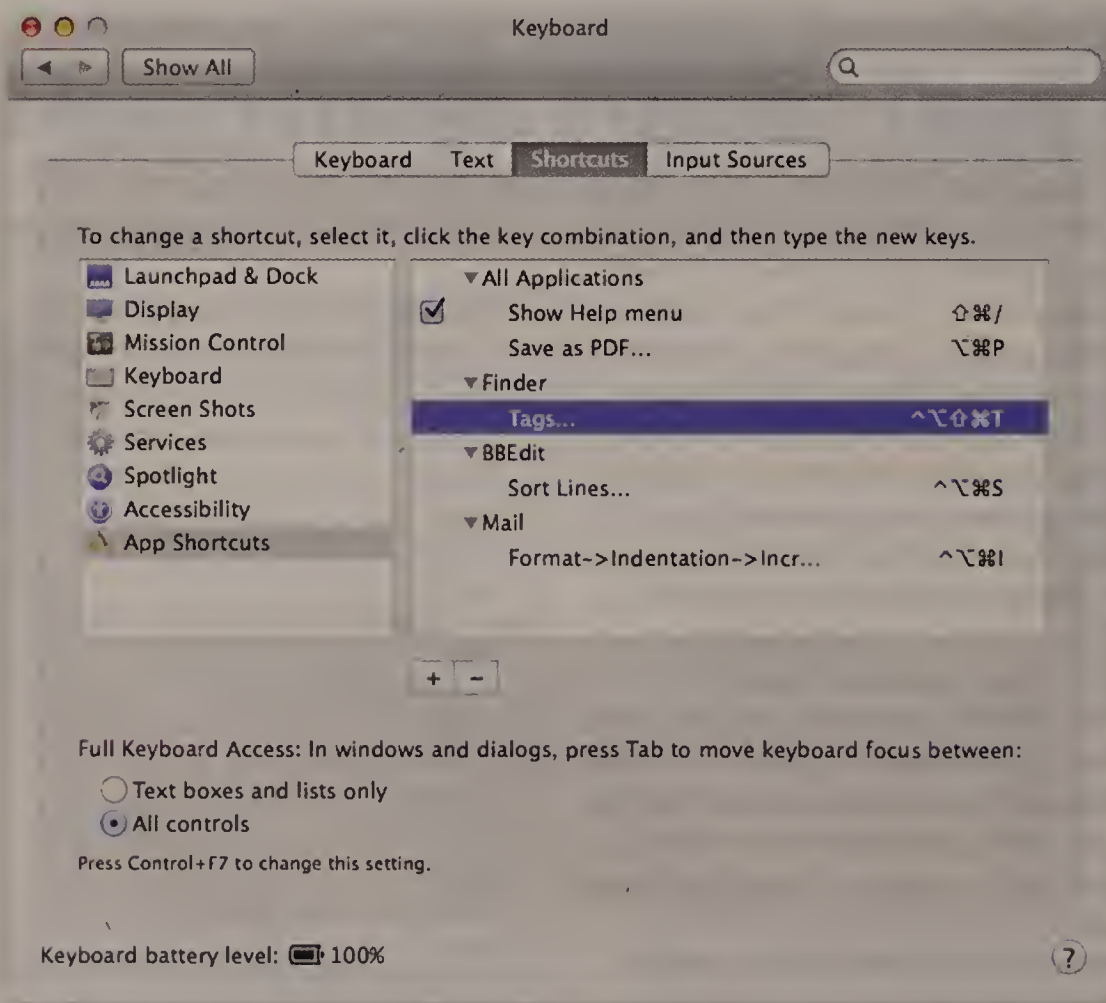
EASY ACCESS Create your own keyboard shortcut to quickly access the Tags menu.

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Beyond the Basics: OS X's Advanced Printer Tools

BY TOPHER KESSLER

POOL THEM Select multiple printers and group them into a pool that serves as one virtual printing device.

Setting up a printer in OS X is usually as simple as plugging it in to your Mac or connecting to a shared printer on the local network. But OS X also offers some advanced options for connecting and managing printers. Here's a rundown.

ADD SHARED PRINTERS ON THE FLY

While you can add a shared printer available to your system using the Printers & Scanners pane in System

QUICK ACCESS Print to different devices using the Nearby Printers menu.

Preferences, you can also do the same from the Print dialog box in any document. In the Printer drop-down menu under the standard Print dialog box, you will see a submenu labeled Nearby Printers. Choosing a printer from that list will let OS X automatically install its driver and set it up for use.

In this way, you can quickly print to a number of different devices, instead of first setting them up in System Preferences. Note that these quick-access options are available only for printers using Apple's Bonjour networking, and that they will not necessarily work for models using other communications technologies.

PRINTER POOLS

At times you may have access to a number of different printers, both shared units and others that are locally available for your Mac. In these cases, you might find it convenient to group them into specific printer pools. Such pools create a single virtual printing device

from several available printers; the system then picks one printer from among all the available ones in the group to handle your print job.

To set up a printer pool, open the Print & Scan pane in System Preferences, and hold the ⌘ key while clicking the various printers you would like to group together. With multiple printers selected, you will see a *Create Pool* button instead of the general information and configuration options for each printer. Once you have named and created the pool, it will appear in the list of printers, and you can easily share it on the network just as you would any other printer.

You can use a printer pool in a couple of different ways. First, you can use it locally, where you create a pool on your Mac consisting of shared and local printers available to you, and then print directly to it. Second, you can create the pool on another computer (such as a dedicated print server) and then share that pool on the network. Unlike the first option, which you have to set up on each Mac separately, a shared printer pool is available as a single device on the network, which you can configure quickly.

Using these options you can, for example, have a pool of printers in an

office, with a single Mac managing the pool; all employees print to the pool through that particular Mac. If one of the pooled printers is offline, the pool will distribute print jobs among the remaining online units.

CUPS CONFIGURATION

You can use the CUPS Web interface to access various advanced configuration options for your printers. You manage this interface locally, and you can easily access it by navigating to the URL http://127.0.0.1:631 or http://localhost:631 through any Web browser.

At first you may see a "Web Interface Is Disabled" warning. If you do, just follow the on-screen instructions and run the following command in the OS X Terminal: `cupsctl WebInterface=yes`. Then refresh your Web browser, and you will gain access to the CUPS

error log and an activity log for all configured printers, which you can use to troubleshoot printer issues or track down where print jobs came from. This feature is exceptionally useful for system administrators; buttons to access these logs should be available in the Server section of the CUPS Administration tab.

Allow or deny users print access: Although you can define which users are allowed to access a shared printer in the Sharing pane of System Preferences, Apple's graphical user interface offers no way to restrict local-user access to

> Your Mac has an error log and an activity log for all configured printers, which you can use to troubleshoot printer issues.

them in CUPS. To do so, click the *Classes* tab and then select your printer pool. Next, choose *Modify Class* from the Administration drop-down and, holding down the ⌘ key, select multiple printers in the list of members. Clicking the *Modify Class* button will change the printer pool configuration.

Move paused print jobs to another printer: If you've sent a print job to a printer and it is paused by an error, you can go to the *Jobs* tab in the CUPS interface and click the *Move Job* button to the right of the print job. Next, choose a new printer in the list and click the *Move Job* button to assign the job to that new printer.

Subscribe to printing events via RSS: If you are an administrator, you can click the *Add RSS Subscription* button at the bottom of the Administration tab. In the next screen, you can select from a number of different events to view, such as job starts, job stops, job deletions, and more. Check the appropriate boxes for the specific events you want to learn more about, and then name and create the feed. The URL to the feed will appear on the main Administration page; clicking that link will open the feed within any standard RSS reader.

CUPS 1.7.2

CUPS is the standards-based, open source printing system developed by Apple Inc. for OS® X and other UNIX®-like operating systems.

UNIX PRINTING SYSTEM

CUPS for Users
Overview of CUPS
Command-Line Printing and Options
What's New in CUPS 1.7
User Forum

CUPS for Administrators
Adding Printers and Classes
Managing Operation Policies
Printer Accounting Basics
Server Security
Using Kerberos Authentication
Using Network Printers
cupsd.conf Reference
Find Printer Drivers

CUPS for Developers
Introduction to CUPS Programming
CUPS API
Filter and Backend Programming
HTTP and IPP APIs
PPD API
Raster API
PPD Compiler Driver Information File Reference
Developer Forum

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CUPS SYSTEM The CUPS Web interface gives you access to a number of advanced configuration options.

configuration interface. (To disable this Web interface, simply rerun the above command but replace **yes** with **no**.)

In the Web interface, you can use the tabs at the top to manage individual printers or entire printer classes (pools). While the options in this interface may at first seem either redundant or too advanced in comparison to the Print & Scan pane in System Preferences, it does offer some useful tools.
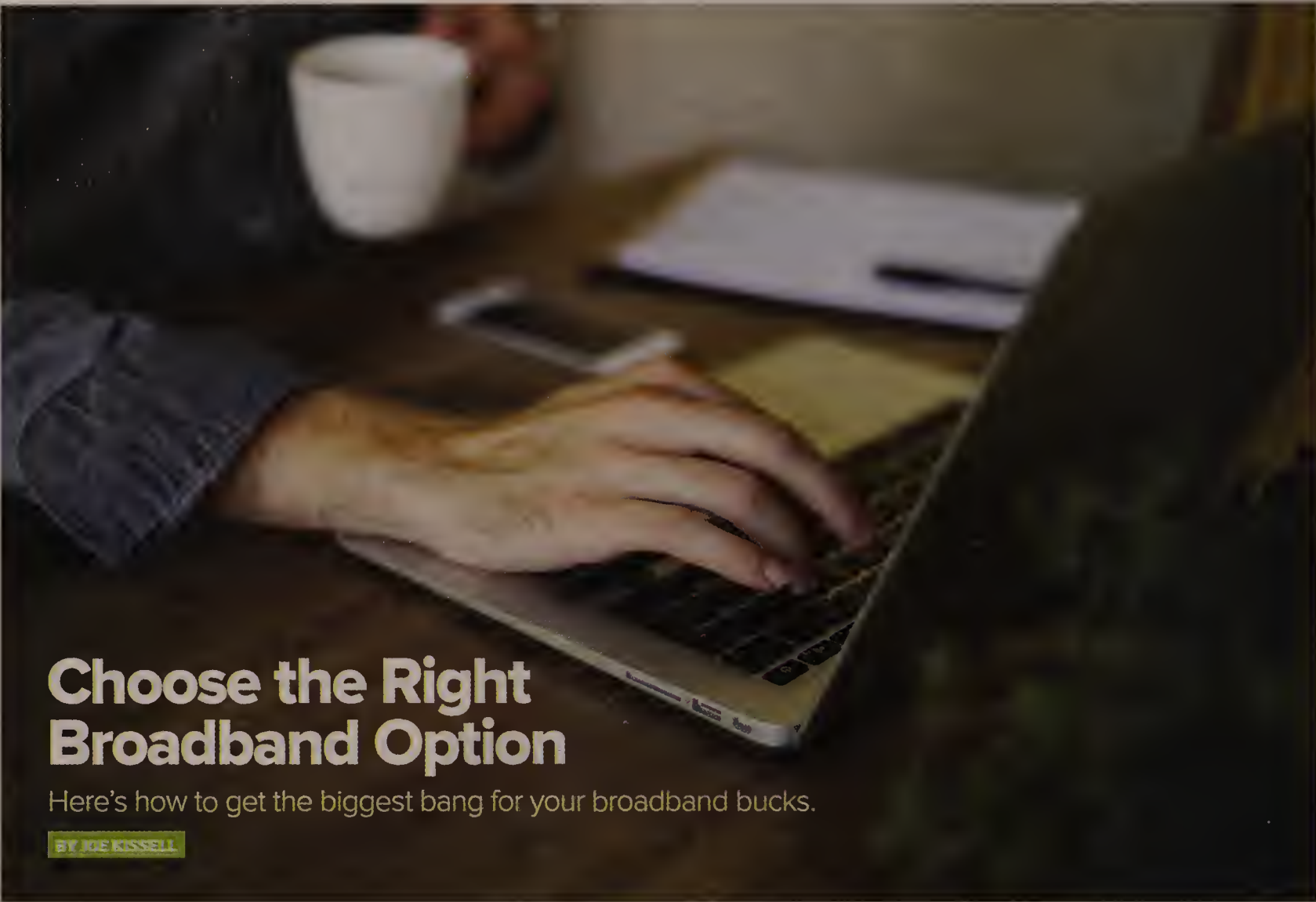
View activity logs: Your Mac has an

the printer. You, however, can do this in CUPS. Simply select the printer in the Printers tab, and then choose *Set Allowed Users* from the Administration drop-down menu. You can enter short usernames separated by commas, and then opt to allow or deny those users access to the printer.

Add or change printers in a printer pool: You cannot drag new printers into an existing printer pool in the OS X interface, but you can add and remove

RESET THE SYSTEM

When configuring your Mac's printers, if anything goes wrong you can always reset the print system to revert the entire printer configuration back to a factory default setting. To do this, first open the Print & Scan pane in System Preferences, and right-click the printer list. The contextual menu that shows up will have a Reset Printing System option. Selecting this (and then confirming that you want to reset) will clear out all configured printers and have you set them up again from scratch. ∎

Choose the Right Broadband Option

Here's how to get the biggest bang for your broadband bucks.

BY JOE KISSELL

I lived in Paris for five years before moving to San Diego at the end of 2012. During that time, I got used to the idea of having half a dozen choices for home broadband service, most offering up to 100 megabits per second of bandwidth and costing perhaps $30 a month for a combination of Internet, phone, and TV.

So it was a rude shock to return to California, where one can easily pay five times as much for equivalent service, and where many people are lucky to have two providers to choose between. In my neighborhood, the only options were Cox (cable modem service) and AT&T (DSL and U-verse fiber-optic service).

Still, those two providers fight furiously to capture customers. I know a bit more than the average customer; I did my research and picked the service that's best for me. But even afterward, I spent months saying "no thanks" to the guys I didn't pick; they persisted in the hard sell (and in the process distorted the facts). Had I been less tech-savvy, I might have fallen for their sales pitch, even though it would have left me paying more for less. Here's my story plus some tips for you to avoid falling into a similar trap.

UP AND DOWN

For me, the biggest consideration was bandwidth—and not just the download speeds. Sure, my family consumes more than its fair share of streaming video, and my work frequently involves downloading multigigabyte installers and other gargantuan files—a task I can't afford to waste time on. But because I use online backup services extensively, upload speeds are even more important to me.

Cox's current maximum bandwidth in my area—assuming, of course, that you purchase the most costly package, and that conditions are ideal—is 100 mbps downstream and 20 mbps upstream. AT&T's U-verse service (which is faster than the company's DSL) maxes out at 45 mbps downstream and 6 mbps upstream. (By the way, I had to do some digging to obtain those upstream figures; AT&T doesn't mention them anywhere on the U-verse site.)

On that basis, Cox was the better choice for me, even though the Internet portion of my service alone (that is, not

> **Research the maximum download and upload speeds each provider claims, and then test your own actual speeds.**

counting cable TV) costs $100 per month. Assuming that both providers actually delivered the maximum throughput they claim, I could upload a 5GB file in about 37 minutes with Cox, but it would take more than 2 hours with U-verse. Backing up a full 500GB hard drive might take as little as two and a half days with Cox, but nine days with U-verse.

Still, every few weeks AT&T sent me an email about U-verse, called me, or even sent someone to my door. Several months ago, an AT&T representative showed up on my front porch, asked about my Internet service, and gave an impassioned sales pitch for U-verse. Did I not realize I was spending far too much money on Cox? Did I not want the most modern fiber-optic technology? Did I know that I wasn't getting my promised speeds?

I explained that I was getting far more bandwidth with Cox than was even possible with U-verse. The rep tried to convince me that I was wrong, because Cox's published maximums are nowhere near actual speeds. I assured him that I had tested my connection on Speedtest.net and knew exactly what my speeds were. (For the record, I typically get about 77 mbps downstream and 23 mbps upstream, which I can't really complain about.)

Then he insisted that my tests were misleading, because of Cox's Power-Boost feature (licensed from Comcast), which temporarily increases download and upload speeds by about 25 percent, bandwidth permitting—but only for the first 18MB to 22MB of a file. So if you're testing your connection only by downloading and uploading small files, you may see an artificially high speed that isn't sustainable for large transfers.

But I explained that I had in fact downloaded and uploaded many large files and had experimental proof of my actual overall throughput—and that, in any case, 25 percent slower than my test results for uploads was still about three times as fast as AT&T's maximum speed. Yet still he kept pushing, until I asked him to leave and closed the door.

KNOW THE FACTS

If I hadn't already collected all the facts, the rep's argument might well have swayed me. It would be great to save money, but for me, bandwidth is king.

If you find yourself facing an intransigent broadband salesperson, keep these tips in mind:

> Do your homework. Research the maximum download and upload speeds each provider claims, and then test your own actual speeds using Speedtest.net or any of numerous similar sites.

> Don't be swayed by the word "fiber." It's true that fiber-optic connections have greater theoretical throughput than copper phone cables or coaxial cable, but that doesn't mean you'll see those benefits as a customer.

> Remember that fast download speeds aren't the only measure of a fast connection—especially if you rely on cloud backup, syncing, or sharing services, for which upload speeds are also important.

Having said all that, I know that both AT&T and Cox have plans for gigabit fiber service in San Diego. I would be thrilled to get more than ten times my current speeds. If AT&T happens to offer me that—along with excellent upload speeds—at a reasonable price, I'm in. But you'd better believe that I'll check the numbers both before and after signing up. ∎

How to Make Two-Factor Authentication Less of a Pain

You have a few options to easily generate and use login codes.

BY JOE KISSELL

You probably know by now that you should never use the same password twice, and that your passwords should be strong enough to resist an automated attack. Perhaps you use iCloud Keychain, or a third-party password manager to generate, store, and fill in random passwords automatically. But all of those precautions may not be enough if a site suffers a security breach that reveals its users' passwords.

At the moment, the best defense is two-factor authentication, in which you need more than just a username and password to log in. You also need a second element, which often takes the form of a numeric string sent by SMS. Most major Internet companies offer two-factor authentication as an option. The problem, however, is that it's a bother, requiring an extra, manual step. Usually you have to do this only once per device, after which point ordinary logins

work, but even so, it's a pain. Here are some ways to reduce that inconvenience.

USE AN AUTHENTICATOR APP

Many services that use two-factor authentication let you use an iOS app—in lieu of SMS—to obtain that secondary code. (This option is handy because SMS isn't always reliable. It's useless in locations where you have no cellular signal, and it won't help you if you're using an iPad.) In some cases, two-factor authentication uses the service's own app. For example, Apple can now use the Find My iPhone app to deliver codes via a push notification, as an alternative to SMS.

But most services use a free, third-party iOS app such as Google Authenticator to generate the codes. You first log in to the service's authentication settings page; there you'll typically find either a QR code or an alphanumeric key. Next, open your authenticator app, add a new account, and either scan the QR code with your
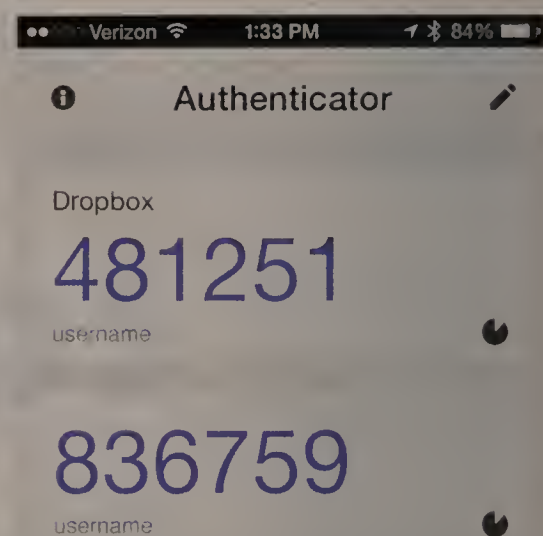
**GET A CODE** The Authenticator generates new codes.

camera or type in the key. From then on, the app generates the secondary codes for your accounts, every 30 seconds.

An alternative to Google Authenticator is a free app called Authy (authy.com). It works with all the same sites as Google Authenticator, but it has an extra capability: It can sync accounts across all of your iOS devices automatically, and (with a free companion Mac app, which works on newer Macs with Bluetooth 4.0 support) can even send codes to your Mac.

USE ONE-TIME VERIFICATION CODES

When you set up two-factor authentication, there's always the worry that you could lose the iOS device you use for that second factor. So most companies supply you with an extra code during the setup process. You should either print this out and keep it in a safe place or put it in a secure digital location. If you ever need to get into the account without your secondary device, this code can save the day.

But some companies take this concept a step further. Evernote, Facebook, and Google, for example, supply you with a list of codes that you can use whenever you like in place of SMS or a code from an authenticator app. You can use each code only once, however; if you run out of them, you have to go back to the appropriate page in the Settings portion of each site and generate another list. Again, keep this list in a safe place—and take it with you when traveling, just in case. ■
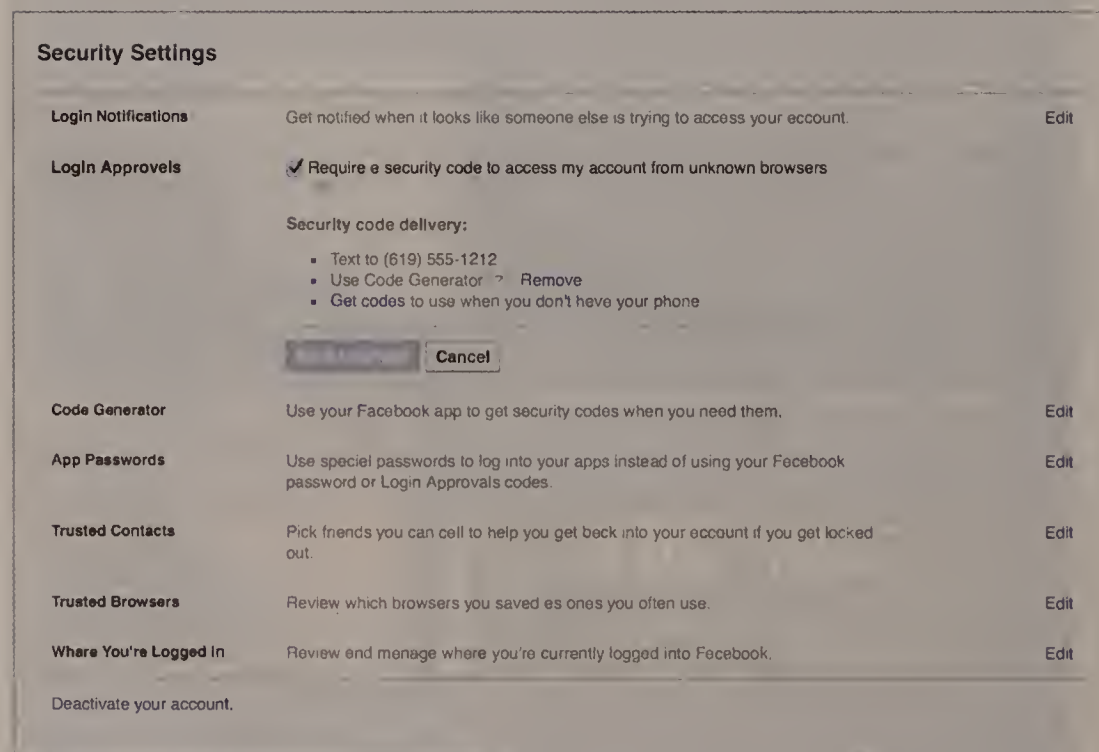
AUTHENTICATE IT Most major online companies offer two-factor authentication as an additional security feature.

Plant a Billion Trees

Join The Nature Conservancy to plant a billion trees,
one tree at a time, in the fight to end climate change
at **plantabillion.org**

The **Nature**
Conservancy

Protecting nature. Preserving life.™

Ten Tips on Using the Cintiq 12WX

Here's a list of things I wish someone had told me about the pen display.

BY LUCY BELLWOOD

Hi there! I'm Lucy Bellwood, a cartoonist working out of Periscope Studio in Portland, Oregon. Last year I switched to a Cintiq 12WX for my digital work. For the most part, I love it, but there are a few things I might not have discovered without a helping hand. So here, for your benefit, is a list of the top ten tips.

1 **Switch up your nibs** Although Wacom's standard nibs are okay, using the felt nib made a big difference in my drawing experience. Unfortunately, you can't use it on any of Wacom's touch-sensitive devices—the tip will mess up the surface.
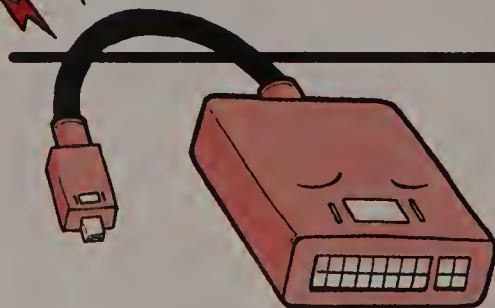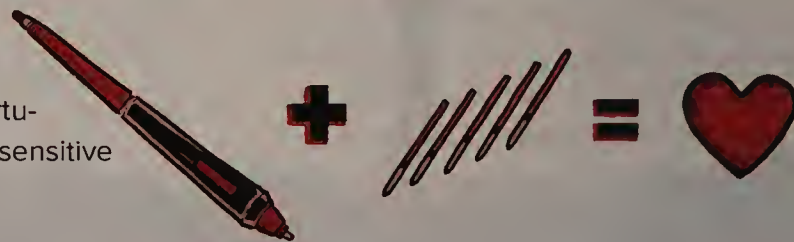
2 **Care for your adapter** Using a Mini DisplayPort-to-DVI adapter? Arrange the cable so that it doesn't come under a lot of strain. These parts are often the first to fail because they're subjected to a lot of abuse. The cost of replacing them adds up!

3 **Arrange your displays** Go to *System Preferences → Displays → Arrangement* to optimize your multimonitor workflow. (**Bonus tip:** Drag the white rectangle at the top of the window to change which monitor displays the top menu bar.)

Finder
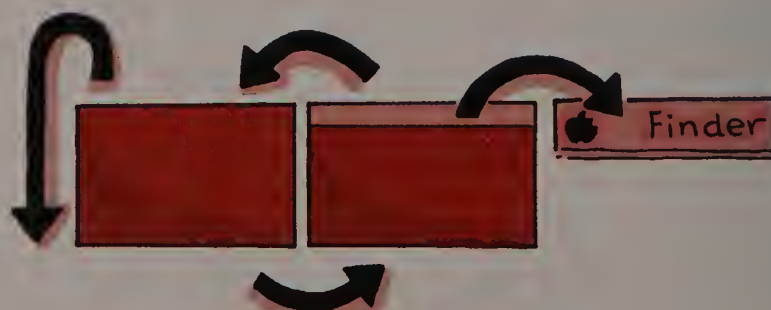
4 **Coil your cords** The Cintiq 12WX is sort of portable, but it also comes with a lot of cables and cords. To save your bag from becoming a nightmare nest of wires, unplug and coil each cable, and fasten them with twist ties.

6 **Set up shortcuts** If you tend to punish your back by drawing while you're curled up on the sofa, set up Express-Keys. That way you won't have to keep your laptop always within arm's reach. You can set them up by going to *System Preferences → Wacom Tablet → Functions* (in the Tool section) → *ExpressKeys*.

7 **Protect your palms** Cintiq screens can get toasty after hours of use, and sweaty palms are no good for drawing. A SmudgeGuard can help you smooth out your strokes and stop your screen from gathering grit that might scratch the surface.

5 **Check the colors** If you're worried about color calibration, drag the canvas window back and forth between monitors to ensure accurate color choices. Working from swatches can also eliminate confusion.

Click Threshold
Sensitivity
Max Pressure

OUTPUT
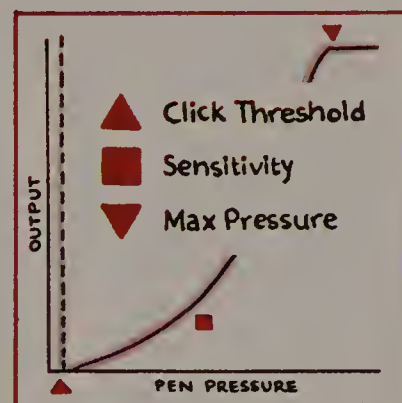
PEN PRESSURE

8 **Tweak the pressure** Visit *System Preferences → Wacom Tablet → Customize* (located in the Tip Feel box) to adjust your pen's Click Threshold, Sensitivity, and Max Pressure. Play with what feels good, and then enjoy your new ergonomic stroke settings.

Open
Transform
Save
Deselect
Invert
Capture Selection
Step Backward
Move
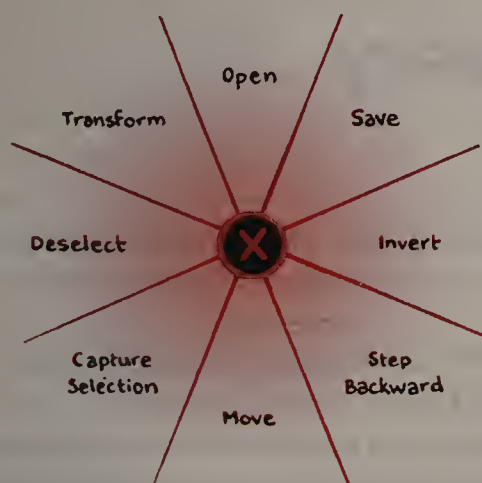
10 **Swap in a pen** Stuck some-where without your stylus? Wacom's Intuos pens are compatible with your Cintiq. Carry one around for those emergency pen-shortage days.

9 **Use the Radial Menu** If you go to *System Preferences → Wacom Tablet → Functions*, you'll find customization options for the Radial Menu—an extremely handy shortcut for preprogramming up to eight tools, keystrokes, or even whole actions.

MOVE IT Relocate your Aperture photo master files to make it easy for you and other apps to access the images.

Life After Aperture and iPhoto: What to Do With Your Image Library

BY JEFF CARLSON

When most companies kill off a neglected product, the damage is usually limited to the few remaining customers who have stuck by it. In the case of Apple retiring the popular iPhoto and Aperture, however, the disruption is much more broad: With iPhoto being the included image-management application on the Mac for years, millions of customers actively use the software. And although Aperture never made as many inroads into the professional community as Adobe's Photoshop Lightroom did, it

was still the Apple-supplied pro option.

Apple is replacing both programs with the upcoming Photos for OS X application, which at this point remains a mystery: Will it incorporate the various advanced features of Aperture? Will it be a stripped-down, limited clone of the Photos app under iOS 8? Or will it turn into something in between?

No matter what's to come, you can start to take steps to prepare for your transition from the outmoded apps—whether that means switching to Photos or migrating to a third-party image application. Also, regardless of

your decision, make sure that you have good, working backups of your photos!

IF YOU WANT TO UPGRADE TO PHOTOS FOR OS X

First, take comfort in the fact that you don't need to immediately block off the next week to migrate your photo library. iPhoto still works and Aperture will get updates to work with OS X Yosemite, which is scheduled to appear this fall (likely October). That gives you at least a year—assuming Apple won't continue to support Aperture in the OS X revision after Yosemite—to plot a strategy,

and more important, to evaluate options as they arrive.

Second, Apple has said that users will be able to migrate their existing photo libraries to Photos for OS X when the application arrives in "early 2015." We don't know yet what that migration process will look like, but it will probably include a built-in step the first time you run Photos that converts the library, just as previous updates to iPhoto and Aperture have done over the years.

A big advantage on this front is that iPhoto and Aperture share the same library format. Currently, you can open a photo library in either application without converting the data. Metadata and adjustments applied in Aperture that iPhoto doesn't have inputs for are simply ignored. I suspect that will remain the approach of Photos, pointing to a (hopefully) smooth migration process.

START REMOVING PHOTOS FROM iPHOTO OR APERTURE

If you are itching to jump to something else, or want to start preparing for an eventual switch, here are a few practical steps you can take right now.

Aperture and iPhoto by default store your photos in a single library file (which is actually a "package," a folder that OS X presents as a single file). The library includes much more than just the image files—it also houses thumbnails of various sizes, database files, and a maze of nested folders.

Remove your photos from Aperture: To make it easy for you and third-party applications to access your images, move them out of the library package and into a regular Finder directory.
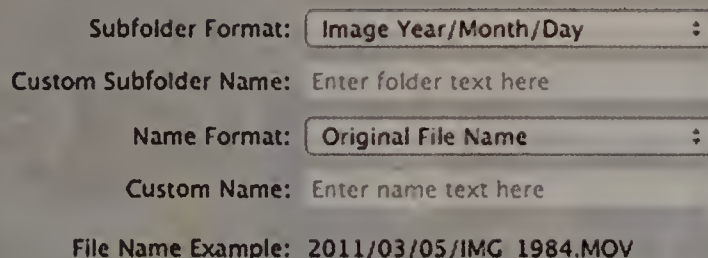
1. In Aperture, select the photos you want to relocate. To move everything, select *Photos* in the Library tab and then choose *Edit → Select All*. However, I strongly urge you to first choose

a small subset of photos as a test, to make sure everything moves over correctly.

2. Choose *File → Relocate Originals*.

3. In the dialog box that appears, select the folder on your hard disk where you plan to store the images.

4. Choose an option from the Sub-

Subfolder Format:	Image Year/Month/Day ⬍
Custom Subfolder Name:	Enter folder text here
Name Format:	Original File Name ⬍
Custom Name:	Enter name text here
File Name Example:	2011/03/05/IMG_1984.MOV

STAY ORGANIZED The Year/Month/Day format creates a folder hierarchy based on the photos' capture dates.

folder Format pop-up menu. With *None* selected here, all the photos appear together in the same folder. I prefer the Image Year/Month/Day option, which builds a folder hierarchy based on the photos' capture dates.

5. Click *Relocate Originals* to move your files. Aperture still keeps track of the items' location, metadata, and any adjustments that you've applied in-app; only the original files move.

Remove your photos from iPhoto: iPhoto lacks a Relocate Originals command, so the photos residing in its library file remain there. You can start

storing newly imported photos into folders, however: Go to iPhoto's settings (choose *iPhoto → Preferences*), click the *Advanced* tab, and turn off the first option, labeled *Importing: Copy items to the iPhoto Library*.

If you own Aperture, you can alternately open your iPhoto libraries in Aperture and relocate the images from there. When you reopen that library in iPhoto, the app will still be

able to work with your images; they'll just be stored elsewhere.

MAKE THE SWITCH NOW

If you choose not to stick with Photos for OS X, or if you want to explore your options before 2015, here are some applications that currently manage photo libraries. Most of them offer trial periods, so you can get a feel for how they work.

For applications offering more powerful library features, look to Adobe Photoshop Lightroom (which is available as part of the Adobe Creative Cloud subscription's Complete plan at $50 per month, or part of the Photography Creative Cloud plan at $10 per month), Adobe Photoshop Elements ($99, no subscription needed), Capture One Pro ($299), or Corel AfterShot Pro 2 ($79).

Applications providing a light interface for working with images in the Finder include Pixa ($30) and Lyn ($20).

As I mentioned earlier, iPhoto and Aperture are not disappearing immediately. The best advice right now for most people is to be patient and see what kinds of features Photos for OS X brings.

> You can start to take steps now to prepare for your transition—whether that means switching to Photos or migrating to a third-party image application.

But if you're looking to switch away from iPhoto and Aperture now, I have good news and bad news.

Switch from Aperture: The process is pretty easy from Aperture, which can export metadata such as ratings, keywords, and location information intact. However, there is a slight complication. The adjustments made to photos you've edited apply only when you export the images as versions, which means saving
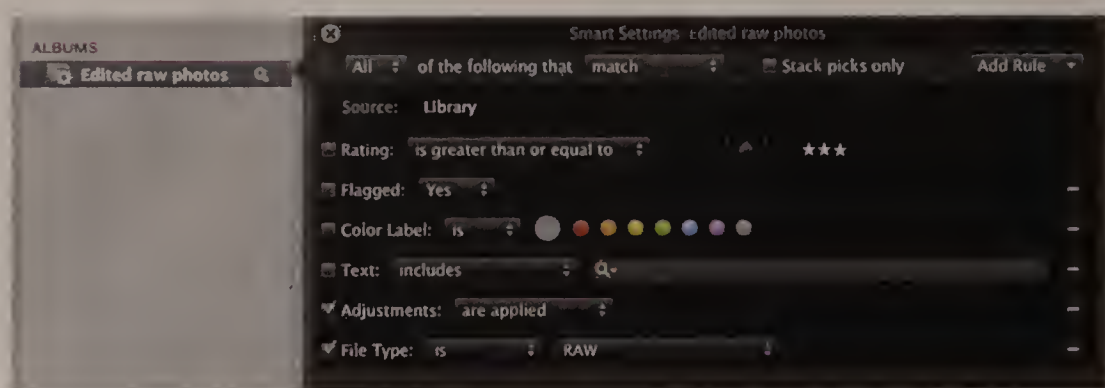
SIMPLE BUT SMART Use a Smart Album to find edited raw photos in Aperture.

them as JPEG files. If your photos are already in JPEG format, this isn't an issue; simply choose *File → Export → Versions* and export the images.

But if you capture photos in raw format, you can't go back and tweak an adjustment using a different application (such as changing the Shadows value or the mix of red, green, and blue channels in a Black & White conversion).

The workaround is to export edited photos with their adjustments applied, and then export the photos' original files separately so that you have the option of editing the source files at a later time. Aperture's Smart Albums feature makes the process a little more manageable.

1. Create a new Smart Album with the Adjustments drop-down menu set to *are applied* and the two File Type drop-down menus set to *is* and *RAW*.

2. Select the images that appear in this Smart Album and choose *Metadata → Write IPTC Metadata to Originals*. That command adds the ratings, keywords, IPTC data, and other metadata to the JPEG files. This step is important if you are importing into Lightroom, because Lightroom ignores sidecar files associated with JPEGs.

3. Change the Smart Album's parameters so that File Type is deselected, which shows all edited photos.

4. Select the photos in this set and choose *File → Export → Originals*.

5. In the Metadata drop-down menu, choose *Create IPTC4XMP Sidecar File*.

6. Click the *Export Originals* button to save the files.

7. Import the photos into your new image-management application.

Switch from iPhoto: If you want to jump from iPhoto to another application, it's a giant mess. The problem is that iPhoto doesn't export metadata well at all, let alone star ratings or your raw image data. When Apple merged the database formats for iPhoto and Aperture, the company blocked all the routes that utility developers used to access the metadata and, for some inexplicable reason, made it impossible to export much metadata.

The switch is pretty easy from Aperture, which can export metadata such as ratings, keywords, and location information intact.

DRAW A LINE IN THE SAND
A cleaner way to switch to another application is simply to start fresh with that program using the photos you shoot going forward. That way, you're not worrying about migrating your photo library at all. The downside to this approach is having bifurcated photo libraries, which requires that you open iPhoto, Aperture, or Photos to find the shots you captured before you started over. But since Apple promises compatibility in Photos with iPhoto and Aperture libraries, even if the new app isn't as capable as you'd like, you can still access and export old photos. ■
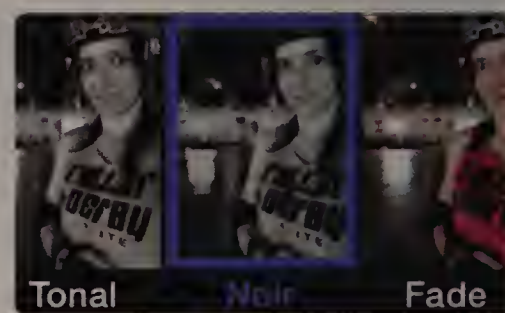
How to Shoot in Only Black and White

BY SERENITY CALDWELL

If you have a craving to shoot black-and-white photos, you don't need a special app. I'd like to suggest the iPhone's very own Camera app. The iOS 7 update added nine filters to it, including a lovely monochrome one called Noir.

You can apply the filters at any time while you're in either the Photo or Square mode of the Camera app. Just tap the filters icon (the Venn diagram of circles in the lower-right corner of the screen), and select the filter you'd like to use.

NOIR PICS Lock your iPhone's camera to take only black-and-white images.

You can also make your Camera app shoot only in black and white. Because the Camera app has two modes—Photo, which shoots a full-size version of the scene, and Square, which crops your photo to that particular shape—you can enable the filter for whichever mode you'd like to take black-and-white photos in. If you want to shoot in the Square mode, turn on the filter in that mode, and then switch back to Photo mode. From then on you'll be able to get an unfiltered image in Photo and a filtered one in Square whenever you open the Camera app—even if you force-quit that app.

The filter selection, however, will disappear upon restart. ■

HELP DESK

Mac 911

Solutions to your most vexing Mac problems.

BY CHRISTOPHER BREEN

Devices Disconnecting? It's About the Hub, Bub

Q: I recently purchased a powered ten-port USB hub because I have a lot of peripherals. I've used nearly all the ports for external devices—a webcam, some external drives, and so on. But when I plug in my camera, I see a message indicating that one of my hard drives has been disconnected, even though I haven't touched the cable or powered down the drive. Is the hub or the drive broken?

Micha Warwick

POWER HUB The power requirements of all your connected devices should fall under the hub's total limit.

A: USB hubs are designed to provide a limited amount of power—say, 250 milliamps (mA) on average to ten devices. As long as the power requirements of all the devices you jack into the hub fall under that total limit, all ten of them should work fine. However, if you exceed the hub's limits—you've plugged in several devices that draw 500mA, for example—you can end up with the disappearance of one of the connected devices.

And how can you tell which devices are pulling a lot of power? Hold down the <Option> key, click the Apple menu, and choose *System Information*. In the resulting pane, select the *USB* item under the Hardware heading. In the list of USB devices on the right, select the hub you've connected to your Mac. At the bottom of the window, you'll see a list of all your connected USB devices.

In this list, look for the "Current Required (mA)" entry for each device. The number that appears here doesn't tell you how much power the device is currently drawing but rather how much power it's requesting the hub to provide. A printer, for example, may require very little power whereas a webcam or a media-card reader may want the full 500mA. (Some Apple devices such as iPhones and iPads require more than 500mA at 5 volts so that they can charge rapidly.) Run through the list and do the math. If your list of devices is pulling too much power from the hub, consider moving some of them to a different USB port on your Mac.

Remove Unwanted Antivirus Software From Your Mac

Q: My wife recently took her Mac to the company where she works as a contractor so that the IT department could install updates for some of the software she's required to use. When she brought the system back home, we discovered that they'd installed McAfee Endpoint Protection. Since its return, her Mac is locking up and she's having problems with her email. I have to think that it's the McAfee product. Do you know how we can uninstall it?

Tim Andrews

A: I do, but before I tell you how to go about that, a word of caution.

Although it would have been nice if the IT person had asked for permission before installing this software on the Mac (as it belongs to your wife and not the company), the business might require some form of antivirus software for any computer that interacts with its email system or has remote access to its servers. My first suggestion is to contact IT, explain the problems you're having, and see if you can come to a mutually agreeable solution.

If that's not possible and you wish to proceed with uninstallation, launch Terminal (found in /Applications/Utilities) and, using an administrator account, enter the following command:

```
sudo /usr/local/McAfee/
uninstall EPM
```

Then press <Return>. Enter the account's administrator password and press <Return> again. If everything goes right, you'll see a message indicating that McAfee Endpoint Protection has been removed. However, McAfee Agent still remains. To get rid of it as well, enter this command in Terminal:

```
sudo /Library/McAfee/cma/
uninstall.sh
```

Press <Return> and then restart your Mac, and McAfee will disappear.

Should you face a similar situation with a different variety of software, it's always a good idea to see what's been added to the /Library/LaunchAgents and /Library/LaunchDaemons folders. Removing unwanted items from these two folders can often put an end to disruptive utilities that launch on startup. Of course, if you have an uninstaller app, it's all the better.

Stream Your Musical Performances Across the Web

Q: My family lives across the country and I'd like to perform a concert for them over the Internet. I have a MIDI keyboard and I play through Apple's Mainstage 3. Is there some way I can stream my performance to them?
via the Internet

A: I've tried this using a couple of different setups, and the one I've settled on is Rogue Amoeba's $59 Nicecast (rogueamoeba.com/nicecast). This software lets you use any app as an audio source and stream its output over a local network or the Internet.

Specifically, here's what you need to do. Download a copy of Nicecast. Launch it and click the Source button. In the pane that appears, click Select, choose Select Application, and navigate to Mainstage. It should launch. (If it doesn't, launch it yourself and then choose it from the Select pop-up menu you just clicked on.)

Now click the Share button. In the resulting pane, you'll see the addresses for your stream—one for the Internet and another for your local network. Click the Copy button to copy the Internet address to the Mac's clipboard. Paste that address into an email or text message that you then can share with your family so they know how to tune in to your stream. (They can do this via a Web browser or, if they're Mac users, they can launch QuickTime Player, choose File ➔ Open Location, and then add the address to the resulting field and click Open.) You'll want to coordinate the time of your performance with your audience so they know when to tune in.

When it's time to start performing, just click the Start Broadcast button and begin banging the keys. You'll know that Nicecast is receiving Mainstage's output when you see the Level meter light up. You should be able to hear your playing as you normally do—likely through headphones or speakers attached to your Mac. Depending on the speed of your connection, people tuning in to your performance will hear it begin a few seconds later.

You may also need to configure your router so that Nicecast can do its job. Specifically, you may have to open up port 8000, which is the avenue Nicecast uses to broadcast its output.

If you have an AirPort base station, the process goes like this: Launch AirPort Utility, click the base station attached to your broadband modem, and click Edit. Click the Network tab in the resulting pane and in the Port Settings area click the plus (+) button. In the

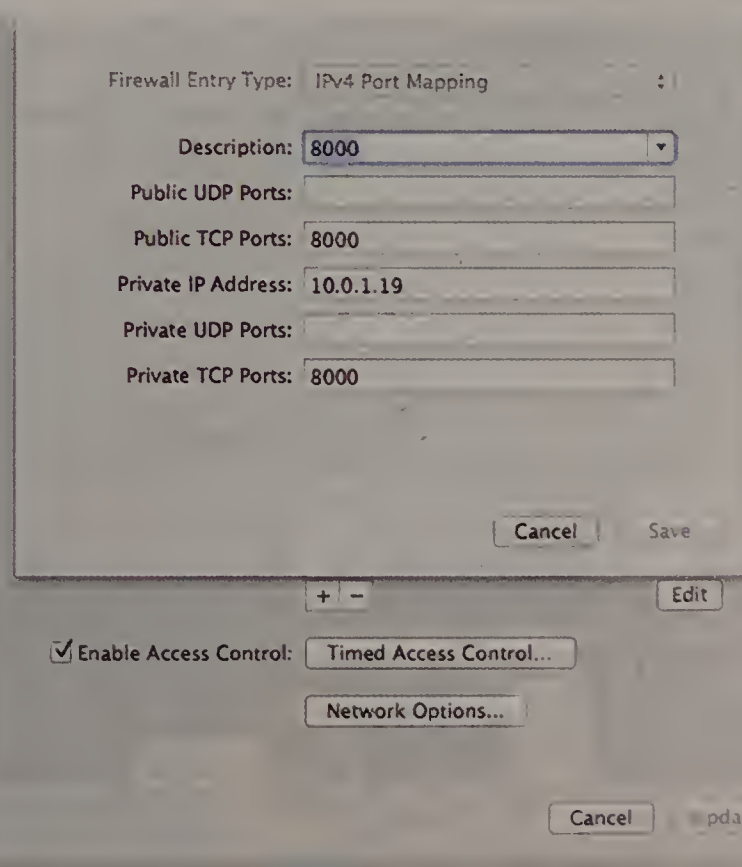sheet that scrolls down, enter a description in the same-named field (`Nicecast` has a nice ring to it) and enter `8000` in the Public TCP Ports and Private TCP Ports fields. In the Private IP Address field, enter the IP address of the Mac that you'll stream from. (You'll find the IP address in System Preferences' Sharing preference.) Click Save and then choose Update to configure the base station with these new settings.

Treat a Processor-Hogging Chrome Browser

Q: The past couple of weeks, my MacBook Pro's fan has been going crazy, coming on suddenly and roaring like a jet taking off. I opened Activity Monitor to learn what was giving my CPU such a workout, and I saw that Google Chrome Helper processes were consuming 50 percent or more of my CPU resources. Is there anything I can do about this?
Daniel Mueller

A: I wish I could offer a silver-bullet solution, but this is a problem for a number of Chrome users; ultimately the solution will have to come from Google's Chrome team. That said, I can

Firewall Entry Type: IPv4 Port Mapping

Description: 8000
Public UDP Ports:
Public TCP Ports: 8000
Private IP Address: 10.0.1.19
Private UDP Ports:
Private TCP Ports: 8000

Cancel   Save

+ −   Edit

☑ Enable Access Control: Timed Access Control...

Network Options...

Cancel   Update

think of a few things for you to try.

Choose *Chrome → Preferences → Extensions* and disable any extensions you don't absolutely need to run. In this same window, click *Settings → Show advanced settings*, choose *Content settings* in the Privacy area, and in the Plug-ins area of the resulting window, enable the *Click to play* option.

While you're there, click the *Disable individual plug-ins* link (or enter `Chrome://plugins` in the address field) and disable plug-ins that you don't absolutely need. As the Adobe Flash Player plug-in appears to be one of Chrome's primary processor hogs, I'd suggest disabling it first.

Run Chrome for a while. If your Mac's fans start spinning again, choose *Window → Task Manager* and click the *CPU* heading. You'll get a readout of which Chrome elements are diverting your processor's attention from more important jobs. If you spy some that you can afford to switch off, do so.

If, at the end of all this, you find that you've basically disabled all those features that you liked about Chrome, turn to another browser until Google comes up with a solution.

Connect an Apple TV to Analog Speakers

Q: I just put a small television set and an Apple TV in my bedroom and connected the two with an HDMI cable. The problem is that the sound from the TV's speakers is really poor. I have a pair of powered speakers, though. Is there some way to connect the Apple TV to them?

Glen Lanier

A: The Apple TV has a digital audio output, and your powered speakers have an analog audio input. You can't simply string a cable between the two devices and expect sound to come out of the other end.

Instead, you'll need to use a digital-to-analog converter. To make this arrangement work, string a Toslink cable between the Apple TV and the

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Mac 101

Reveal Mavericks's Hidden Screensaver Images

Q: I love some of the images that appear in Apple's Aerial screensaver collection. Some of them also appear as Desktop backgrounds, but not all of them. Is there a way I can use them as my Mac's background pattern?
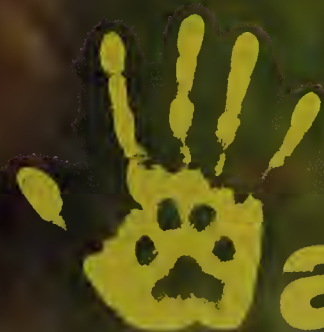
Anna Howarth

A: In the Finder, choose *Go → Go to Folder*, enter `/Library/Screen Savers/ Default Collections/`, and click *Go*. In the resulting window, you'll see four folders: National Geographic, Aerial, Cosmos, and Nature Patterns. These folders hold all the images for the screensavers of the same name.

You have a couple of ways to make the images appear as Desktop backgrounds. You can select an image and choose *Finder → Services → Set Desktop Picture*. Or you can launch System Preferences, open the Desktop & Screen Saver preference, click the *Desktop* tab, and drag those four folders into the bottom of the image selection area. When you select a folder here, the images it contains will appear on the right. Select the one you want to use as your Mac's Desktop background.

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converter. Then connect the converter and the speakers by using an analog cable. With proper cabling, the Apple TV will send its audio to the speakers.

A converter like this needn't break the bank. I have a similar setup in my bedroom, and I got the job done for around $30 (I already owned both the cables and the speakers).

Find Yourself When Your Mac Can't

Q: I have an older Mac Pro running OS X Mavericks. When I launch the Maps app, the Location icon is grayed out so I can't ask Maps to pinpoint my location. How can I get this feature to work?

Chris Jenkins

A: I'm afraid you can't with your Mac's current hardware configuration. Early Mac Pros shipped without an AirPort card (you could add one as a build-to-order option), and Maps depends on a Wi-Fi connection to tell its location. You could always add such a connection by either ordering and installing the

original AirPort Extreme Card or purchasing a USB Wi-Fi adapter. With one of these components on board, your Mac Pro will use Wi-Fi triangulation to approximate its location and pass that information along to Maps.

The other option is simply to tell Maps where you are whenever you need to. Given how large your Mac is, you're unlikely to haul the machine around from place to place, so you need to set up a way to easily call up its normal location.

Try this method: Open the Contacts app and create a new contact. In the Company field, enter an appropriate name for where your Mac resides—**Home**, **Work**, or **Secret Underground Lair**, for example—and then enter the street address for that location. Save the contact. When you're working on that Mac and you wish to use your current location within Maps, just type the name of the contact you created into Maps' Search or Start field. When you do so, the location will appear under the Contacts list in the results list. Select that location and watch as a red pin drops to denote where you are. ■

"SURE, AT FIRST I WAS A LITTLE TAKEN ABACK BY THE WHOLE PEEING STANDING UP THING. BUT I TAUGHT HIM TO THROW A STICK AND NOW HANGING OUT WITH HIM IS THE BEST PART OF MY DAY."

– EINSTEIN
adopted 12-09-10

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George Nachman
Software engineer, Google

WHAT DO YOU DO?

I work at Google on the Google Search App for iOS, and my "20 percent project" is iTerm2 (iterm2.com). I'm also into woodworking, and my goal is to build all my home furniture from scratch. I love making stuff, whether physical or virtual. Helping others to be more productive is how I accumulate karma.

WHAT HARDWARE DO YOU USE?

My setup at work is pretty cool: I sit in a **zero-gravity recliner**. My monitor is a **Dell 4K display**. It's on a pole-mounted monitor arm so I can position it exactly where I need it when lying almost horizontally. I use an **Apple Bluetooth keyboard** and **Magic Trackpad**, which is the greatest thing since oxygen. And I use a **Mac Pro**.

When I'm at home, I use a **13-inch MacBook Pro**. I used to use a 15-inch MacBook Pro, but I got tired of elbowing strangers on airplanes.

AND WHAT SOFTWARE?

I switched over to the Apple universe in 2007, having previously used Windows and Linux. I still use Linux for server-side stuff, but I spend 90 percent of my time doing client development, which suits my personality much better. Not using Windows has been a blessing, because I'm no longer competent to fix broken Windows PCs.

For coding, I use **Vim** when possible and **Xcode** when necessary. Since I'm old-school, my shell is still **tcsh**. I'd like to use bash, but tcsh's shortcuts are in the ganglia of my fingers. I got a shell account at my local ISP when I was in high school and learned Unix by typing random commands until something worked. I strongly believe that a person without access to a *nix shell at all times is not living up to his or her full human potential.

That said, I think **Alfred** is a darn fine program. I use **Photoshop** and **Pixelmator** for graphics stuff. On my iPhone, I'm a big fan of **Downcast** for listening to podcasts, and **Reeder** for RSS feeds (backed by **Feedbin**, which is quite awesome). I'm still addicted to **Flappy Bird**; my high score is 81, which I'm both proud and ashamed of.

WHAT IS YOUR DREAM SETUP?

I'm pretty sure I have it already. I do wish there were more options for ergonomic keyboards with built-in trackpads, though. It would be really cool to get waterproof equipment and work from a hot tub, but that's probably impractical.

INTERVIEW COURTESY OF **THE SETUP** (USESTHIS.COM, TWITTER: @USESTHIS).